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ABSTRACT

This handbook is addressed to organizations with goals related to post high school learning. Basic information is provided about future societal developments in the United States that should be taken into consideration in making organizational decisions. Some practical methods for long-range planning are also outlined. Four areas of societal change are considered: (1) demographics; (2) work; (3) political economy; and (4) "learning inventions." In exploring the four areas of change, the likely trends in each are plotted and some possible sources of discontinuity are examined. The authors' judgments about these societal developments and their implications for postsecondary education are included as notes to the text. (MSE)

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Future Societal Developments and Postsecondary Education

A Handbook for
Citizen Organizations

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

Robert Johansen Patricia A. Samuel

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FUTURE SOCIETAL DEVELOPMENTS
AND POSTSECONDARY EDUCATION

A Handbook for Citizen Organizations

Robert Johansen

Patricia A. Samuel

Supported under grants from
Lilly Endowment, Inc.

Institute for the Future
2740 Sand Hill Road
Menlo Park, California 94025

March 1977

Report R-38

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Kathleen Spangler assisted greatly in editing the report and was also involved in a research capacity earlier in the project. Maureen McNulty, Arthur B. Shostak, and Gloria Lindsey Alibaruho read drafts of this report, and all made very useful suggestions for revision. Margaret Chula wrote portions of the "Learning Inventions" section and did the artwork. Jeanne Muzzicato and Carreen Jensen assisted at various points and typed the manuscript during the project. Jeanne Muzzicato was responsible for proofreading and production of this final report; her careful work is greatly appreciated.

John A. Ferguson of Lilly Endowment, Inc. was the project monitor; he provided invaluable guidance and assistance at many points. Dr. Ferguson was a strong colleague to us during the project, and we offer both thanks and praise for his contribution. As Vice President for Education, Dr. James B. Holderman contributed greatly to the original vision of this project and to those parts of it which we have been able to implement.**

*Other published reports from this project are Robert Johansen and John A. Ferguson, "Mapping Views of the Future in a Small Group," *Futures*, April 1976; Robert Johansen and Patricia Samuel, "Futurology Applied to Education," *Educational Technology*, forthcoming; and John A. Ferguson and Robert Johansen, eds., *Teleconference on Integrated Data Bases in Post-secondary Education*, Institute for the Future, 1975.

**Dr. Ferguson is now with Consolidated Foundations, Inc., Indianapolis; Dr. Holderman is at the Academy for Educational Development, Inc., Indianapolis.

INTRODUCTION

This handbook is for organizations with goals, particularly goals related to post high school learning. It provides basic information about future societal developments in the United States which should be considered in making organizational decisions. It also outlines some practical methods for long-range planning. All organizations have strategic choices to make, and such choices inevitably involve judgments--either conscious or unconscious--about societal changes which are likely to affect their goals. A flexible long-range planning structure which encourages direct consideration of potential societal changes is thus a necessity.

We have selected four areas of societal change to consider: demographics, work, political economy, and "learning inventions." We selected these areas by first examining major changes in society and then considering possible changes in postsecondary education. At the broad social level, we constructed lists of global issues, referring to the general literature of futures research and previous Institute for the Future studies. Next, starting with a list of possible changes in postsecondary education, we asked, "What external events or trends could influence the likelihood of a particular change?" The result was a lengthy list of future developments linked to likely changes in postsecondary education. Reviewing this list, we identified clusters of related developments. These clusters are summarized in our four categories.

In exploring the four areas of change, we first plotted the likely changes in each. We make no claim to know how 1990 will look. But we can sketch alternative developments which seem probable. Thus, in Part I of this handbook, we outline some of the trends in each area. And since past trends do not always continue unimpeded into the future, we also looked at some possible sources of discontinuities. Developments which might halt or reverse past trends are described as are new trends which might emerge. Our aim is to provide basic qualitative and quantitative information to

assist you, the reader, in making judgments about societal developments and their relationship to postsecondary education. Our own judgments about the implications of these developments for postsecondary education are included as marginal notes.

A word about definitions: postsecondary education, as we have used it, can include any learning activity--formal or informal--pursued by persons beyond the age of compulsory schooling. In addition to traditional collegiate education, such a broad definition includes community colleges, proprietary schools (profitmaking vocational training programs), noncredit offerings, corporation-sponsored education, and even self-directed learning which does not involve a formal program. While such a definition is vague in its broadness, it is responsive to the times--a generally accepted definition of education or the role of schools is difficult to pin down. These are troubled times for postsecondary education, with basic questions debated everywhere: Are we educating too many people? Are attempts to equalize educational opportunities really working? What are the roles of vocational education? of the liberal arts? In spite of all our educating, are we actually becoming a more ignorant society? Are current institutional forms of postsecondary education viable in a future context?

At present, perhaps 30 percent of all Americans between 18 and 60 are engaged in some form of educational activity.* The Department of Health, Education, and Welfare conducts triennial surveys of *part-time* adult participation in *organized* educational activities. The 1972 survey found that 16 million (over 12 percent of the population over 17) were engaged in at least one part-time educational activity.** This number is, of course, in addition to over 12 million full-time students. Furthermore, one survey indicates that over 75 percent of those 18 to 60 might be interested in participating in some future program.***

*Abraham Carp, Richard Peterson, and Pamela Roelfs, *Adult Learning Interests and Experiences*, Princeton: Educational Testing Service, 1973.

**National Center for Education Statistics, Department of Health, Education, and Welfare, *Participation in Adult Education: Final Report, 1972*, U.S. Government Printing Office, 1974.

***Carp, Peterson, and Roelfs, *op. cit.*

The image of postsecondary education as "college kids"--18 to 22 years old--is fast becoming an inaccurate stereotype. Over 40 percent of all college students are over 21;* also, postsecondary students are pursuing programs in varied types of educational institutions. In the 1972 DHEW Survey, less than 25 percent of the part-time students surveyed were enrolled in four-year colleges and universities. Substantial numbers were in two-year institutions, in employer-, labor-, or community-organized programs, or in trade schools. Over 16 percent were in institutions classified as "other," indicating a broad range of new institutional forms that grate against traditional categories.

The dynamic nature of postsecondary education invites new ideas but threatens narrowly defined programmatic goals. Organizations with interests related to postsecondary learning will be affected by a range of societal developments moving far beyond the traditional realm of "education." This handbook suggests ways in which community organizations can develop their program goals in the context of current information about societal developments.

In using this book, groups that are directly involved in postsecondary education will probably want to study both Parts I and II in some detail. They might begin by scanning the implications noted in the margins of Part I and then go on to gain a sense of the long-range planning process suggested in Part II. Then, serious users should go back to Part I, making marginal notes about their own judgments of specific implications for their organization. Members of organizations with less interest in postsecondary education *per se* will probably want to spend most of their time with Part II, since these procedures are certainly not limited to groups with education-related goals.

*Source: U.S. Bureau of the Census, "School Enrollments: Social and Economic Characteristics," *Current Population Reports*, Series P-20, No. 286, November 1975.

PART I
AN OVERVIEW OF SOCIETAL CHANGES

DEMOGRAPHICS:
THE STUDENT OF 1990

Population trends are fundamental to the future direction of postsecondary education. How many students will there be in 1990, and how old will they be? What residential patterns might influence the kind of learning they seek? This chapter explores the demographic context for educational policymaking--the changing age structure of U.S. society, geographical shifts in residential patterns, and emerging trends in family life.

AN ADULT SOCIETY

The U.S. population is likely to grow at a slow, but steady rate of slightly less than 1 percent annually through the year 2000. Thus, by 1990, Americans will number 247 million, or about 15 percent more than today. As Table 1 reveals, it is the working-age segment of the population--the 18- to 64-year-olds--that will grow the most. By 1990, the number of people aged 18 to 64 is expected to increase by 24 million, compared to a 7 million increase in the elderly population and virtually no change in the number of people under 18.

TABLE 1. U.S. POPULATION: 1975-2000*

(millions)

<u>Age</u>	<u>1975</u>	<u>1985</u>	<u>1990</u>	<u>2000</u>
0-4	16	20	20	18
5-17	50	45	49	53
18-64	125	142	149	160
65+	22	27	29	31
TOTAL	213	234	247	262
Median Age (years)	28.8	31.1	32.3	34.8

The United States, then, seems destined to become an increasingly adult-oriented society. While the under-18 population constituted 35.5 percent of the total population in 1960, they will shrink to 28 percent of the total by the 1990s. Concomitantly, the current trends suggest that the median age of the population will rise from 29 years to 35 years by the end of the century.

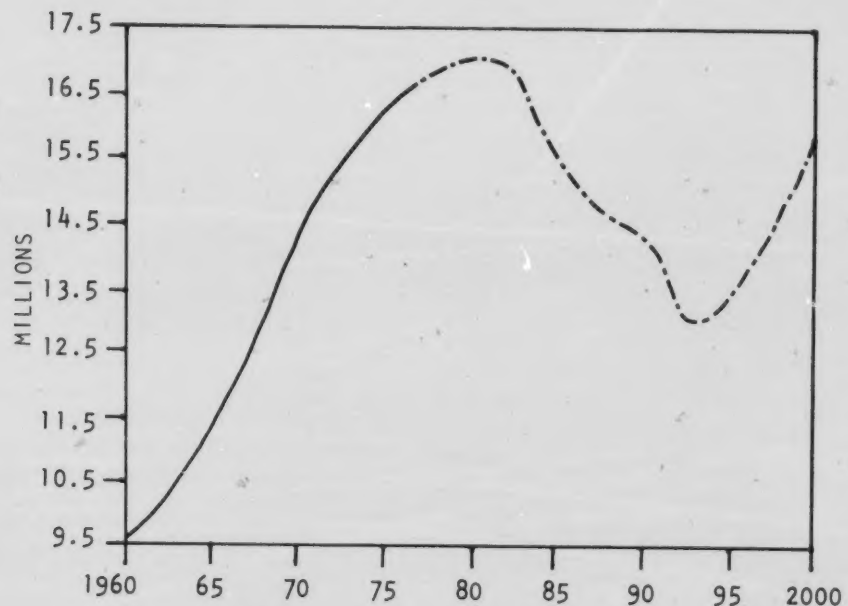
With the rise of the median age, the number of 18-to-21-year-olds is declining. Traditionally, college students have come from this pool, which grew from 9.5 million in 1960 to 14.8 million in 1970 and will peak at about 17 million near the end of this decade (Figure 1). In the coming

The majority of future students are likely to be older. Already, students under 22 barely outnumber their older counterparts--14% of all first-year students are 25 years or older.

*U.S. Bureau of the Census, "Projections of the Population of the United States: 1975-2050," *Current Population Reports*, Series P-25, No. 601. These projections are based on the following assumptions: (1) fertility rates continue at the replacement level (2.1 children born to each woman); (2) no significant increase in life expectancy; and (3) net immigration continues at present rates, approximately 400,000 annually.

decade, however, it will contract by about 2-1/2 million, rising again as we approach 2000.

FIGURE 1. NUMBER OF 18-TO-21-YEAR-OLDS, 1960-2000*



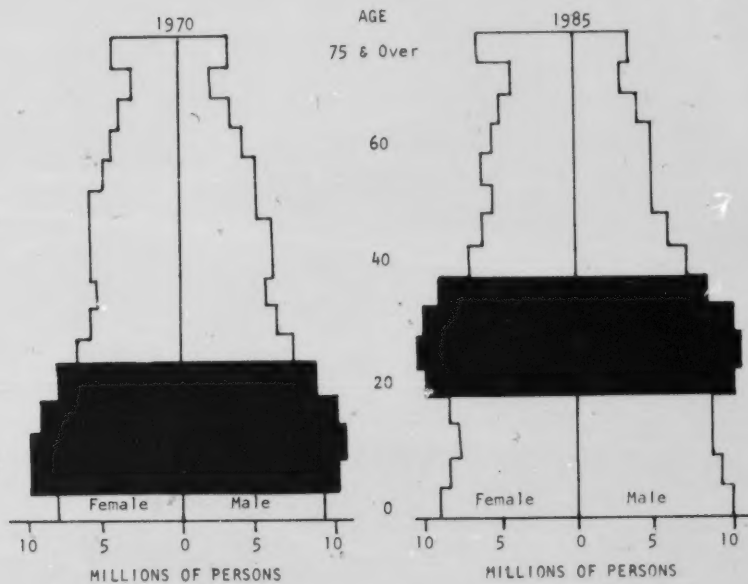
Where will the new majority allocate educational funds?

By far, the predominant age group in 1990 will be adults 25 to 45 years of age. These are the people born between 1945 and 1965--the so-called baby boom generation--who earlier tipped the population scales in favor of youth

*U.S. Bureau of the Census, "Projections of the Population of the United States: 1975-2050," *Current Population Reports*, Table 8; historical data from *Statistical Abstract of the United States: 1975*, Table 3. The projections assume that future birthrates will hover around the replacement level; i.e., 2.1 children per woman.

(Figure 2). Due to sheer numbers, the baby boom generation, which far exceeds any other 20-year age cohort in the population, can be expected to exert a disproportionate effect on society.

FIGURE 2. THE CHANGING U.S. AGE DISTRIBUTION*



THE ADULT LIFE CYCLE: LESS STABLE

The kind of effect exerted by this age group will be intimately linked to the problems and concerns of young adults. Adulthood is frequently viewed as a state of mind that people reach after they are 21. The nature of this

*U.S. Bureau of the Census, "Projections of the Population of the United States: 1975-2050," *Current Population Reports*.

*Will traditional
educational programs
be suitable for these
new adult students?*

state of mind has, however, escaped precise analysis. Even developmental psychology has done a more precise job of analyzing the pre-21 than the post-21 phases. Furthermore, the nature of the life cycle appears to be changing. A comparison of the emerging life cycle with the traditional one shows a general movement away from monolithic experiences which cover long periods of time. The traditional vision of *formal education, lifelong careers, and everlasting family structures* is changing. In its place are *recurring periods or episodes when individuals may experience several different careers, multiple educational environments, varied belief systems, and significantly different marriages--though perhaps with the same person.** The kind of personal questions which adults will now be asking are more like those traditionally asked by adolescents. These are basic questions about life; they focus on refining a view of the world. Introspective periods have always occurred during adulthood, particularly with regard to death. But the new kind of questioning will be more continuous and particularly complex. Thus, even if adulthood was stable in the past, it won't be during the coming years.

MORE RURAL LIVING

Historically, U.S. residential patterns have been characterized by a continuous growth in the proportion of the population living in metropolitan areas. However, this trend

*As two persons each experience rapid changes in their own lives, it becomes increasingly difficult to sustain a static marriage relationship. Thus, two people who marry may actually become significantly different people and still choose to remain married, probably under some redefined conditions based on the changes in each of them. Sidney Jourard has labeled this process "serial polygamy with the same person" and suggests that such an evolution in relationships will become increasingly common.

toward increasing urbanization appears to have halted, and for the remainder of the century, the population distribution should stabilize at roughly the present levels (Figure 3).

FIGURE 3. PERCENT DISTRIBUTION OF POPULATION BY METROPOLITAN AND NONMETROPOLITAN RESIDENCE, 1950-1974*

NONMETROPOLITAN AREAS	37	33	31	32
SUBURBAN	27	33	38	38
CENTRAL CITY	36	34	31	30
	1950	1960	1970	1974

During the past five years, central cities have not only stopped growing, but the largest have actually lost population.

*William Gorham and Nathan Glazer, eds., *The Urban Predicament*, The Urban Institute, Washington, DC, 1976.

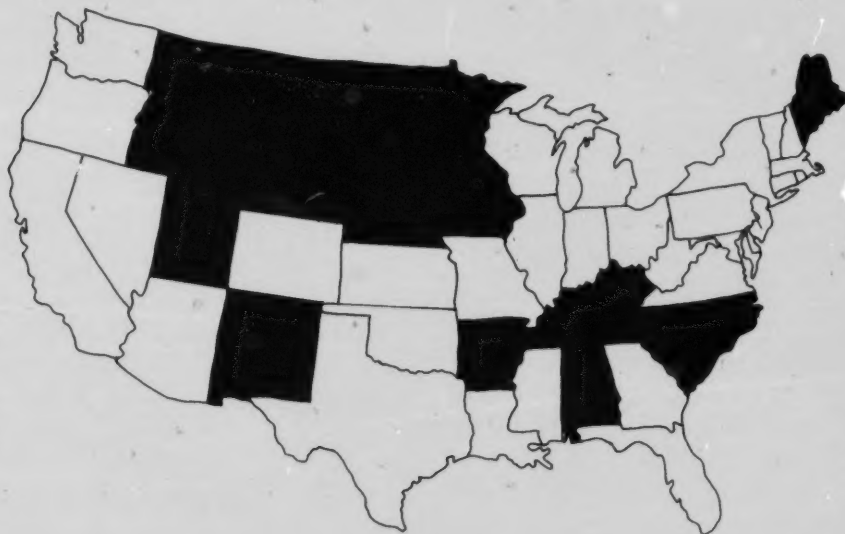
How will urban institutions respond? New York universities, for example, have begun emphasizing continuing education.

Curricula in urban areas could emphasize survival skills and urban living.

And while the surrounding suburban areas have continued to grow, their rate of growth has slowed since the decade of the '60s. Nonmetropolitan areas, however, are growing almost twice as fast as they were in the 1960s.

The recent growth of nonmetropolitan areas has been accompanied by changing patterns of interstate migration. In recent years, 17 predominantly rural states which historically experienced a net out-migration of their population have shifted to net in-migration. These newly popular states are shown in Figure 4. Such heavily urbanized areas as New York, Pennsylvania, Ohio, Illinois, Rhode Island, Connecticut, Michigan, and Washington, DC, on the other hand, witness more people moving out than moving in.

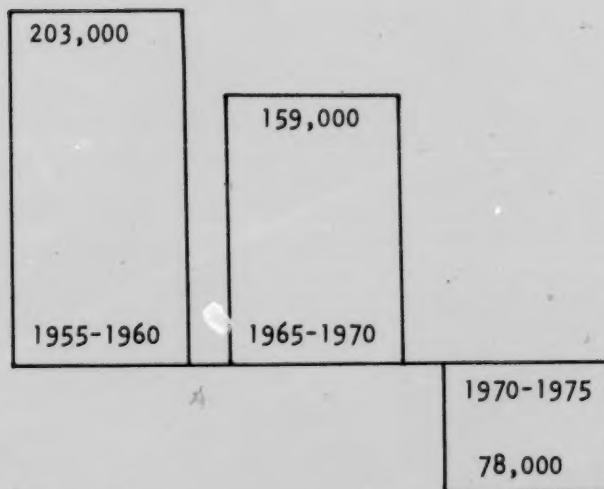
FIGURE 4. STATES SHIFTING FROM NET POPULATION
OUT-MIGRATION TO NET IN-MIGRATION*



*Statistical Abstract of the United States: 1974, Table 12.

Also, the flow of blacks from the South to the Northeast and North Central regions has stopped. Black in-migration to these regions, which fueled the growth of cities after World War II, has been reversed, as shown in Figure 5.

FIGURE 5. NET BLACK MIGRATION FROM SOUTH TO NORTHEAST AND NORTH CENTRAL REGIONS, 1955-1975*



THE RURAL STUDENT

The direct effect of the shift from urban to rural living on participation in postsecondary education is difficult to assess. Table 2 shows college participation rates

*Gorham and Glazer, op. cit.

Will new "rural" society mean less demand for formal education? Not necessarily. While college enrollments might decline with the rural shift, programs in other institutions--like YWCA courses in basic mechanics--might grow.

for 1974, broken down by metropolitan and nonmetropolitan, and for white and nonwhite students. Clearly, those in metropolitan areas (especially whites) have been more active participants than their rural counterparts. Based only on this information, one might conclude that the current rural shift will mean lower overall participation rates for postsecondary education. However, the new rural residents are likely to be more attuned to the use of educational resources than their rural neighbors have been. If postsecondary institutions can be responsive to the needs of this new constituency, these enrollment patterns might be transformed.

TABLE 2. COLLEGE ENROLLMENT RATES: 1974*

(percent)

Age	All Races Metro- politan	All Races Nonmetro- politan	White Metro- politan	White Nonmetro- politan	Black Metro- politan	Black Nonmetro- politan
18-19	35.7	27.4	37.2	28.2	24.1	20.7
20-21	32.1	22.8	33.0	23.3	22.1	19.1
22-24	17.0	9.1	17.5	8.9	11.3	9.8
25-29	10.8	5.6	10.9	5.8	9.7	3.5
30-34	6.1	3.9	6.0	3.7	6.2	6.4

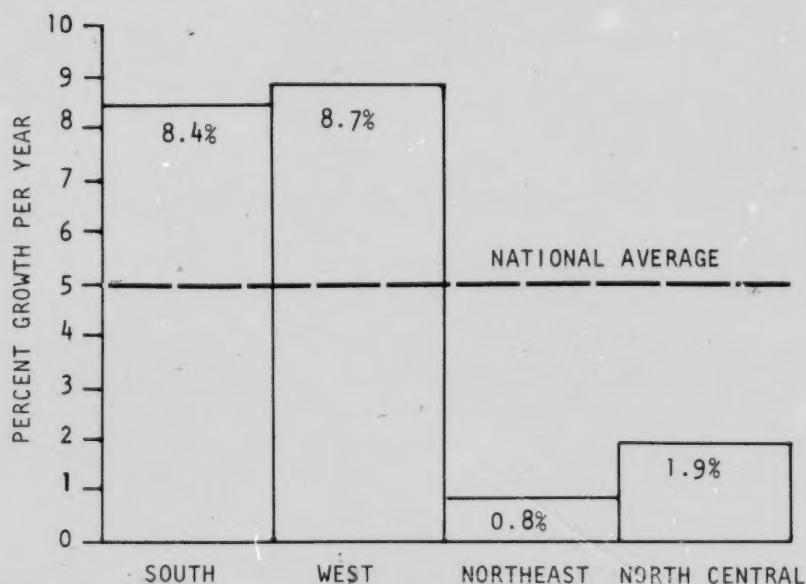
*U.S. Bureau of the Census, "School Enrollment--Social and Economic Characteristics of Students: October 1974," *Current Population Reports*, Series P-20, No. 286, November 1975.

THE SOUTH AND WEST: A NEW HOME FOR MANY

One result of the changing patterns of urban/rural migration has been to accelerate the shift of population from the industrialized Northeastern and North Central states to the Southern and Western regions of the United States. The Northern tier of long-industrialized states, stretching from the Atlantic to the Mississippi River, previously supported the majority of the U.S. population. But the latest figures indicate that fully half of the population now lives outside the Northern industrial tier. And since all but one (Maine) of the fastest growing states are located in the South and West, this section of the country should overtake the older settled areas of the North in the near future.

Participation in post-secondary education does not vary greatly from region to region, but appears to be highest in the West-- in 1972, 25% of total population over 17 were full- or part-time students in this region.

FIGURE 6. REGIONAL DIFFERENCES IN U.S. POPULATION GROWTH, 1970-1975*



*U.S. Bureau of the Census, "Estimates of the Population of States with Components of Change: 1970 to 1975," *Current Population Reports*, Series P-25, No. 640, November 1976.

As Northeast representation in Congress declines, what changes might emerge in national education policies?

As the balance of population shifts from the Northeast to the "sunbelt states," so may the balance of economic and political power.* As Figure 7 shows, employment opportunities have gradually declined in the Northeast and North Central regions. And the new sunbelt citizens may grow increasingly reluctant to subsidize their resource-poor brethren in the North.

FIGURE 7. PERCENT DISTRIBUTION OF NONAGRICULTURAL EMPLOYMENT BY REGION, 1949-1974**

NORTHEAST	31.9	29.1	26.5	24.9
			28.5	28.0
NORTH CENTRAL	31.0	29.5		
			28.4	29.4
SOUTH	24.7	26.5		
			16.6	17.7
WEST	12.4	14.9		
	1949	1959	1969	1974

*A provocative discussion of this thesis can be found in Kirkpatrick Sale, *Power Shift: The Rise of the Southern Rim and its Challenge to the Eastern Establishment*, New York: Random House, 1975.

**Gorham and Glazer, op. cit.

The growth of the "sunbelt" states, along with the decline of the urban Northeast, is bound to have influence on the dominant values of both the movers and those left behind. The newly rural residents may adopt more individualistic values as they struggle to become resettled in a nonurban world. As they leave the urban problems behind, their political mood could shift as well. A new conservatism, consistent with individualistic values, could have profound effects on the settling of rural areas and the recovery of cities. A move toward rural self-sufficiency, however, will not necessarily mean individualism on the rise. Social movements of both individualistic and collectivistic bent are likely to arise under the banner of self-sufficiency. The population shifts are merely creating a "slippery" change point which will be subject to strong influence from other trends and events.

Conservative educational institutions--focusing on conservative values--are likely to grow.

FAMILIES: SMALLER, LESS STABLE

Family and work typically form the center of attention during adulthood, and these two institutions seem particularly vulnerable to change as the number of young adults swells. More people will be living alone, and the size of families will decline. In fact, 60 percent of all households will consist of only one and two persons by the year 1985 (Table 3). Thus, over one-third of the population will be living alone or with just one other person.

Flexible curricula--varied times, course lengths--will be crucial. Currently, proprietary schools show an advantage here.

TABLE 3. PERCENT DISTRIBUTION OF
POPULATION BY HOUSEHOLD SIZE*

	<u>1 Person</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5 or More</u>
1960	13.1	27.8	18.9	17.6	22.6
1973	18.5	30.2	17.3	15.7	18.3
1985	24.0	35.5	16.5	13.0	12.0

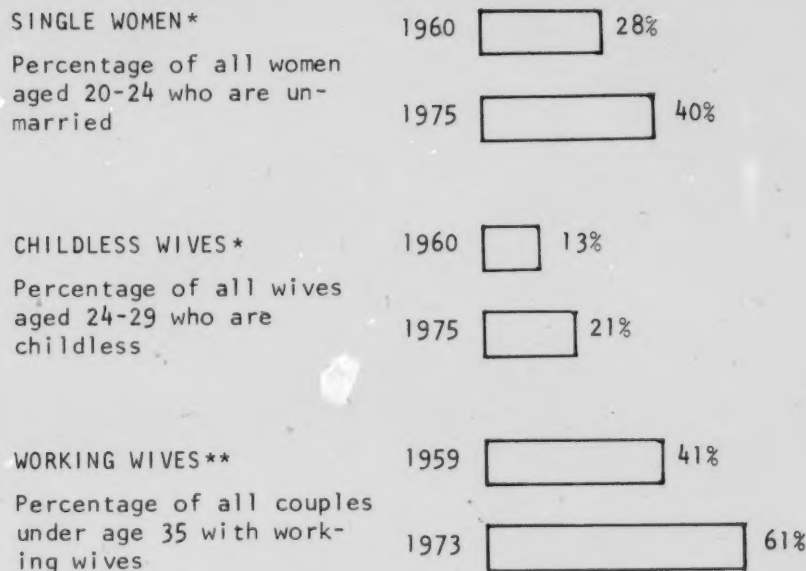
Counseling for lifestyle changes may become important functions of educational institutions.

Will rising employment of women increase their demand for education? Current evidence shows 62 percent of women participants in part-time educational activities are employed compared to only 41 percent of nonparticipants.

At the same time, changing sex roles will continue to transform the traditional nuclear family (Figure 8). The definitions of "husband" and "wife" are in flux, particularly regarding the role of women. It is not clear whether the recent increase in single women and childless wives indicates that younger women are merely postponing marriage and motherhood or rejecting these roles. But whether married or not, most women will be employed outside the home. Already, working wives are found among 60 percent of couples under 35. And the number of working women should continue to climb. If present trends continue, 75 percent of all women aged 20 to 54 will be in the labor force by 1990.

*U.S. Bureau of the Census, "Household Money Income in 1960(73); Selected Social and Economic Characteristics of Households," *Current Population Reports: Consumer Income*; also, Institute for the Future estimates.

FIGURE 8. CHANGING ROLES OF WOMEN



*U.S. Bureau of the Census, "Population Profile of the United States: 1975," *Current Population Reports*, Series P-20, No. 292, March 1976. These figures are almost entirely determined by the behavior of the white majority. Black women are more likely to be single (53 percent of 20- to 24-year-old black women were unmarried in 1975). Among black wives of age 24 to 29, the proportion who are childless has remained relatively constant over a 15-year period, hovering around 15 percent.

**Statistical Abstract of the United States: 1975, Table 564. While both black and white couples registered a similar increase in the proportion of dual-earner families, the absolute percentage of working wives among black couples is much higher, rising from 50 percent in 1959 to 68 percent in 1973.

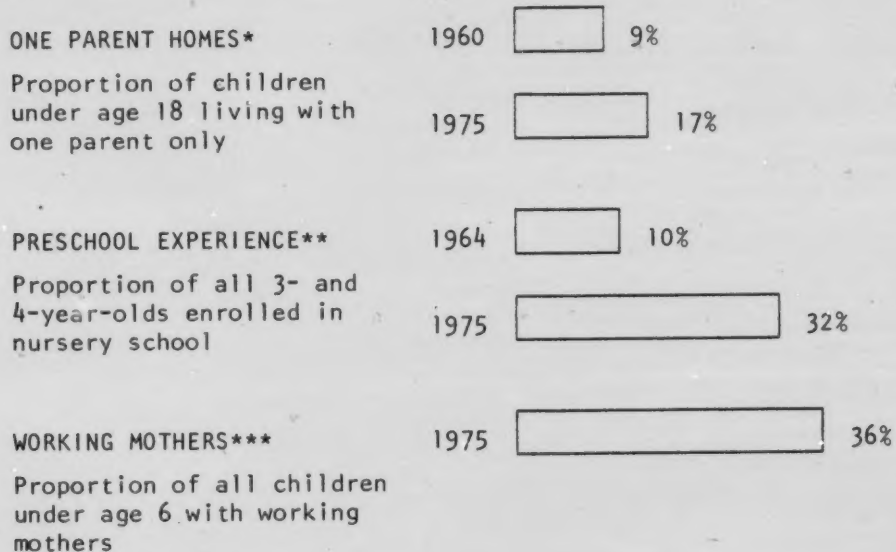
How would college curricula change if such traditional feminine traits as nurturance, empathy, and intuition become socially valued for all adults?

Children are likely to be self-sufficient earlier, since parents won't be as accessible to them.

As we move toward fewer sex role distinctions, one question which remains unanswered is whether women will simply adopt traditional male values--aggressiveness and overachievement--or whether a new adult role will emerge that combines aspects of both roles. Should we anticipate a future society in which no adults perform the nurturant role formerly assumed largely by women?

Changing lifestyles and sex roles will also impact today's child--the college student of 1990. Children will grow up in the next decade with fewer siblings; the average family size will hover around two children. However, the tripling of preschool enrollments in the last decade indicates that children will also function outside the family circle at a much earlier age. In addition, children will most likely have to adapt to changing parent figures. In 1975, 17 percent of all children lived in single-parent families and estimates of the number of children living with stepparents range as high as 30 percent. In the future, the proportion of children living with both their own parents continuously until age 18 could fall below 50 percent. (See Figure 9.)

FIGURE 9. CHANGING ENVIRONMENT OF CHILDREN



*U.S. Bureau of the Census, 1960 Census of the Population, Subject Report "Families," PC(2)-4A, Table 6; and "Marital Status and Living Arrangements: March 1975," *Current Population Reports*, Series P-20, No. 287, Table 4, December 1975. In 1975, 39 percent of all nonwhite children lived in single-parent families, compared to 13 percent of white children.

**U.S. Bureau of the Census, "School Enrollment--Social and Economic Characteristics of Students: October 1974, October 1975 (Advance Report)," *Current Population Reports*, Series P-20, No. 286, November 1975, and No. 294, June 1976. Preschool enrollments show little variations by race and sex.

***U.S. Department of Labor, Bureau of Labor Statistics, *Children of Working Mothers*, March 1975, Special Labor Force Report, issued August 1975. Forty-eight percent of all black children under 6 years old have a mother in the labor force, compared to 34 percent of white children.

Colleges may have to revamp their student services programs to prepare for these incoming students.

Children depend--and the next 10 years probably won't be very dependable. Movements for increased legal rights for children may eventually help define their role and rights in society, but the initial effect will likely be even less role stability. The old rules will be obsolete and the new ones undefined. Thus, while the rest of American society will be reevaluating and reassessing, children will still be seeking a lot of basic personal security. Perhaps some youthful insecurity will help prepare children for an unstable world, but such a view seems optimistic beyond existing social theory. The next 10 years will be hard on children.

CONCLUSION

The population of the United States is growing older and becoming more formally educated. It is shifting toward the semirural "sunbelt" states, with the urban areas finally stabilizing--and sometimes stagnating. Meanwhile, households are getting smaller, as Americans explore a variety of different living arrangements now considered possible.

These smaller family units will be busy families. Both parents (where there are two) are likely to be working, with their roles less related to gender. The children will have more formal education from an earlier age. While family-oriented values will certainly be important to a population such as this, the notion of "family" is changing. This is a population with changing needs, needs which are only dimly understood at present. And future American values will be shaped largely by the ways in which these needs are--and are not--met.

II. WORK:

THE MARKETABILITY OF AN EDUCATION

Education has often been viewed as preparation for work. But while such a direct tie between education and work is still assumed in many quarters, it is rapidly becoming a questionable assumption. Myth breakers of both academic and popular fold are making the "case" against college as a valid preparation for work. There is talk of "overeducation" in many fields, meaning more education than the available work prescribes. The next decade thus appears to be one of rethinking traditional relationships between education and working. Education will certainly retain its own worth in "preparing the whole person," but the effect of this preparation in the world of work may come under increasing scrutiny.

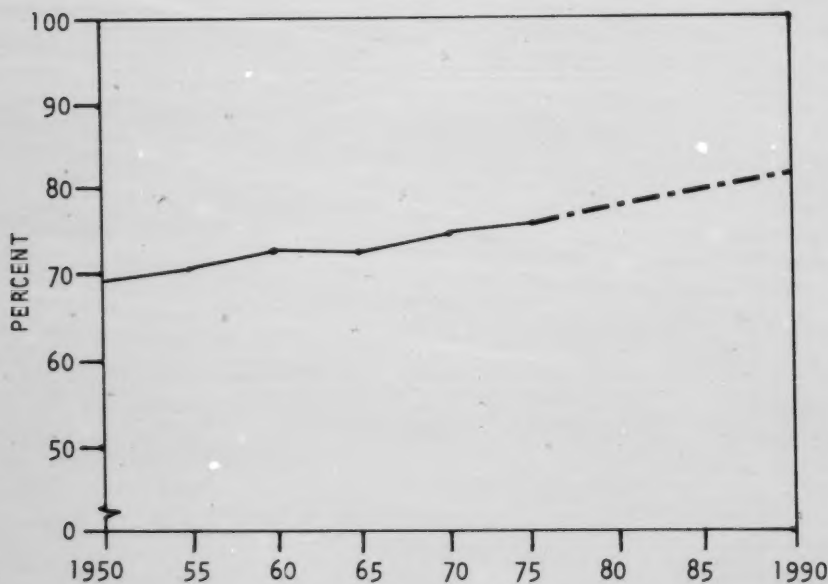
The debate about the worth of a college education is likely to continue.

1990: MORE WORKERS

The labor force is commonly defined as all persons 16 or over who are employed or actively seeking work. It includes those working part-time as well as those working full-time, those working for wages or salaries, the self-employed, and even unpaid family workers in small businesses. Finally, it includes the presently unemployed who are seeking a job. The proportion of the population which participates in the labor force has varied over the past three decades (Figure 10). In 1947, almost all able-bodied men were in the work force. But today the labor force participation rates of older men are very low, as both law and custom dictate withdrawal from employment by age 65 (Figure 11). On the other hand, participation rates for women have dramatically increased. Indeed,

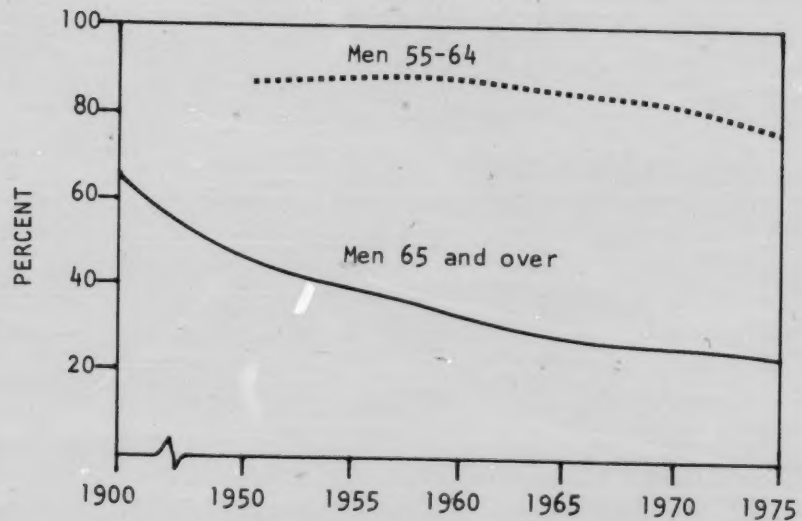
over half the growth in the labor force during the last 20 years can be attributed to the increased percentage of women workers.

FIGURE 10. THE LABOR FORCE AS A PERCENTAGE OF TOTAL U.S. POPULATION AGED 18-64, 1950-1990*



*Derived from Bureau of Labor Statistics, U.S. Department of Labor, *The U.S. Labor Force: Projections to 1990*, Special Labor Force Report No. 156; Bureau of Labor Statistics, *Employment and Unemployment during 1975*, Special Labor Force Report No. 185; and Bureau of Labor Statistics, *Handbook of Labor Statistics 1975 - Reference Edition*.

FIGURE 11. LABOR FORCE PARTICIPATION RATES
OF MEN OVER 55 YEARS OF AGE*



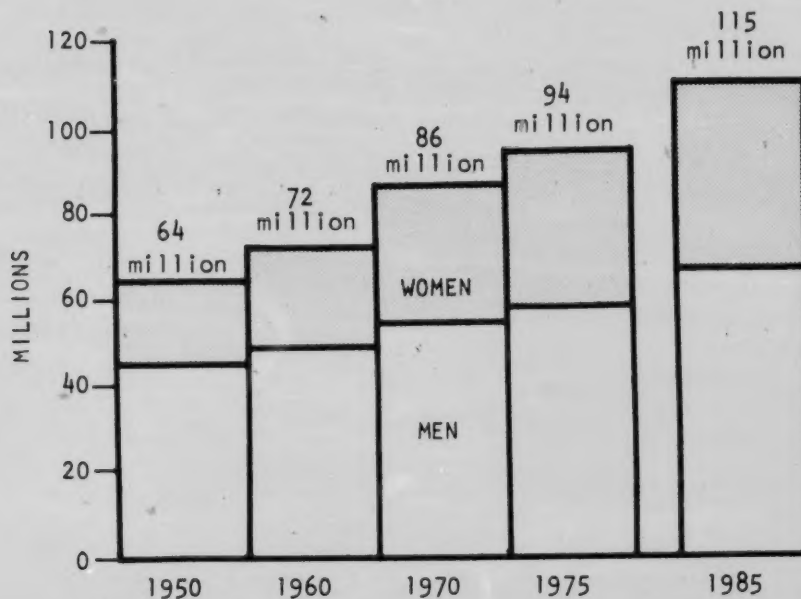
The U.S. Bureau of Labor Statistics (BLS) projects a total work force of 113 million persons in 1990--a work force 20 percent larger than today.** These projections assume: (1) a continuing decline in the proportion of people over 55 who are in the work force, (2) only a modest increase in the participation rates of women, and (3) no significant increase in the participation rates of youth. But if the BLS projections underestimate the participation rates of women and

*Bureau of Labor Statistics, U.S. Department of Labor, *Handbook of Labor Statistics; Employment and Unemployment during 1975*.

**Bureau of Labor Statistics, *The U.S. Labor Force: Projections to 1990*, Special Labor Force Report No. 156.

youth, the actual size of the labor force could be nine million higher than projected--or 28 percent larger than the 1975 labor force (Figure 12).

FIGURE 12. GROWTH OF THE U.S. LABOR FORCE, 1950-1985*



MORE WOMEN WORKERS

Traditionally, female participation in the work force has been highly correlated with education; that is, the more education a woman has, the more likely she is to be employed outside the home. Since the number of younger women with college educations is growing rapidly, proportionate increases in the number of working women can be expected.

Career counseling will be crucial, especially for women.

*Statistical Abstract of the United States: 1975; and Institute for the Future projections.

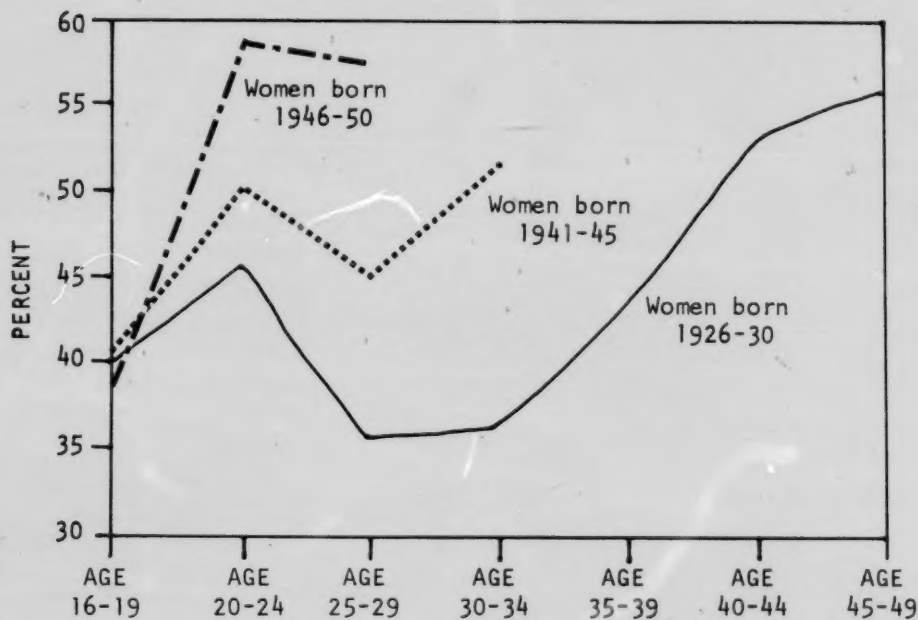
Also, responsibility for rearing small children has often kept women out of the labor force in the past. But this barrier is falling. As birthrates have dropped to an average of two per woman, the number of years a woman must devote to childraising has also declined. Furthermore, women are no longer dropping out of the labor force when their children are born. In 1950, only 12 percent of married women with children under 6 were in the labor force; by 1975, the proportion had risen to 37 percent.

Curricular selections by women and men are likely to become more similar.

The pattern of a woman's participation in the labor force over her lifetime is thus becoming more similar to that of a man. Consider the group of women born in any five-year period prior to 1946 (Figure 13). About 40 percent joined the work force during their late teens. This percentage typically swelled as the cohort entered its early 20s. Then, as these women approached the prime child-bearing ages of 25 to 30, the numbers in the work force declined significantly. After 35, the numbers in the work force again began to increase as the women grew older, reaching a peak around age 50--a peak which far exceeded the previous participation rate of 20-year-olds.

However, beginning with the 1946 cohort, this pattern changes. In recent years, the decrease in participation rates as women move from their early to late 20s has been evaporating. In fact, in 1975, the participation rates of women aged 25 to 29 fell less than 1 percent.

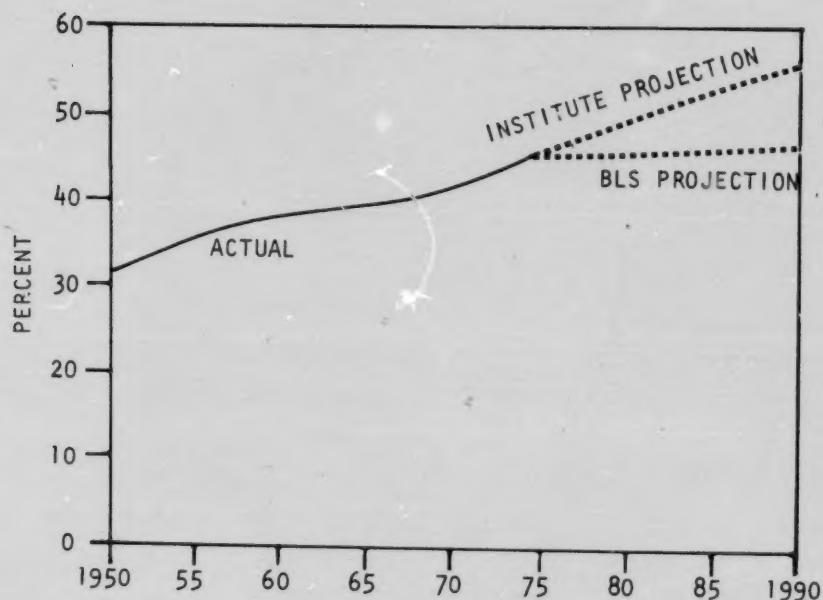
FIGURE 13. WOMEN'S LABOR FORCE PARTICIPATION HISTORIES, SELECTED COHORTS*



Based on these changing patterns of participation, we might anticipate that 56 percent of women 16 and over will be in the labor force in 1990. Under these assumptions, labor force participation rates for women in the prime working years--ages 20 to 54--would average 75 percent, and the 1990 labor force would include nine million more women than that projected by the BLS (Figure 14).

*Bureau of Labor Statistics, U.S. Department of Labor, *Handbook of Labor Statistics*; and *Employment and Unemployment during 1975*.

FIGURE 14. WOMEN'S LABOR FORCE PARTICIPATION RATES, 1950-1990*



It is not yet clear whether the participation of women will be spread equally among occupations or what new patterns might arise. At present, women workers are clustered in a few occupations--primarily clerical, nursing, and teaching jobs--while other occupations are dominated by men. The effects of women on various occupational roles are also still largely undetermined.** Finally, the changing distribution

*Bureau of Labor Statistics (BLS), U.S. Department of Labor, *The U.S. Labor Force: Projections to 1990; Employment and Unemployment during 1975*; and Institute for the Future projections.

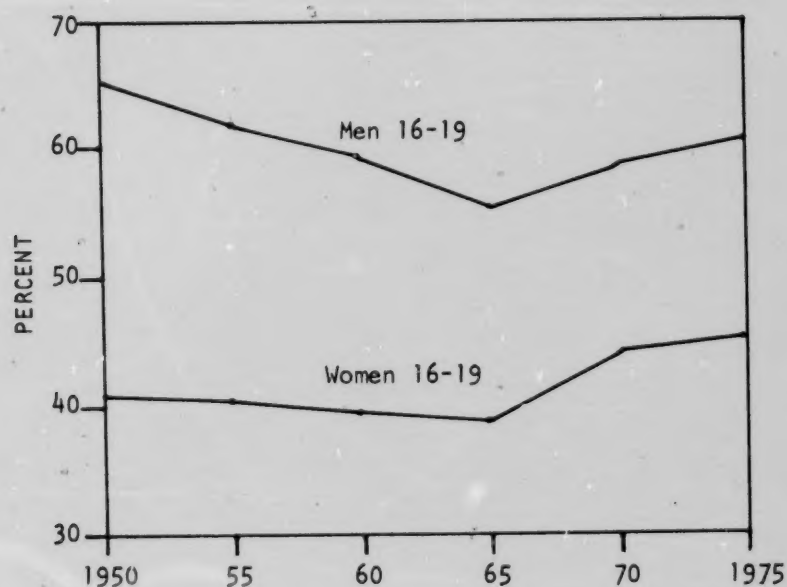
**For instance, a comparison of male and female management styles is provided in Jerolyn R. Lyle and June L. Ross, *Women in Industry*, Lexington, MA: D. C. Heath and Co., 1973.

of men and women among occupations could have effects on wage structures (see the chapter on Political Economy).

THE YOUTH WORKER: A SMALL CHANGE

The labor force behavior of youth does not reveal such clear patterns. The rates for both young men and young women declined from 1950 to 1965. However, in the last decade, this pattern has been reversed, with an upturn in youth participation in the labor force (Figure 15). Participation

FIGURE 15. LABOR FORCE PARTICIPATION RATES OF YOUTH, 1950-1975*



*Derived from Bureau of Labor Statistics, U.S. Department of Labor, *Handbook of Labor Statistics; Employment and Unemployment during 1975; The U.S. Labor Force: Projections to 1990*, Special Labor Force Report No. 156; and *Educational Attainment of Workers*, Report No. 186, March 1975.

Will youth simply postpone participation in postsecondary education or will new patterns of participation emerge?

The number of self-supporting, independent students seems likely to increase. (Already, people in the labor force are more likely to participate in educational programs than those who are not.) What kind of programs will appeal to this group?

rates for young women now exceed 1955 levels, and while the rates for young men have not yet attained the 1955 level, they are rising.

One explanation for the growth of the youthful labor force is the growing percentage of students who finance their education by working at least part-time: today almost half of all male students work while attending school compared to only one-quarter in 1947 (Table 4). If these trends continue,

TABLE 4. LABOR FORCE PARTICIPATION RATES AMONG STUDENT YOUTH*

(percent)		
Year	Males 18-19	Females 18-19
1947	25.4	21.2
1950	36.0	27.7
1955	43.9	28.1
1960	34.9	27.9
1965	36.2	29.0
1970	41.2	37.7
1974	44.5	39.5

the BLS projections underestimate the numbers of youth who will be seeking work in 1990. On the other hand, political decisions, such as an increase in the minimum wage, could significantly reduce opportunities for youth participation in the labor force. Nevertheless, since persons aged 16 to 20 are

*Bureau of Labor Statistics, U.S. Department of Labor, *Handbook of Labor Statistics*.

a relatively small portion of the total population, a change in their participation rate will have only a small effect on the total size of the labor force.

THE OCCUPATIONAL MIX: FEWER MANUFACTURING, MORE SERVICE JOBS

In summary, then, there will be more workers in 1990--as many as 21 million more. What types of jobs will this expanding labor force seek and find? Since 1945, there has been a gradual decline in the proportion of workers employed in manufacturing, while the proportion employed in services and government has grown (Table 5). Perhaps reflecting this

TABLE 5. DISTRIBUTION OF LABOR FORCE
BY INDUSTRIAL SECTORS*

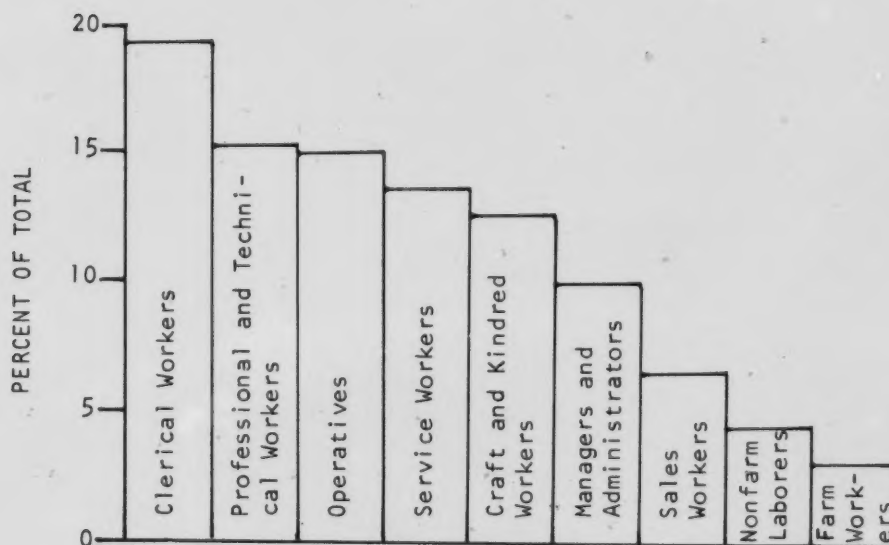
(percent distribution)

<u>Industrial Sector</u>	<u>1930</u>	<u>1950</u>	<u>1970</u>	<u>1975</u>
Manufacturing	32.2	33.7	27.2	23.6
Wholesale and Retail Trade	20.8	20.8	21.2	21.9
Government	10.8	13.3	17.7	19.8
Services	10.6	11.9	16.4	18.1
Transportation, Public Utilities	12.6	8.9	6.4	5.9
Finance, Insurance, Real Estate	4.8	4.2	5.2	5.4
Contract Construction	4.7	5.2	5.0	4.4
Mining	3.4	2.0	.9	.9

*Historical Statistics of the United States; and
Statistical Abstract of the United States, 1975.

trend, fully 25 percent of today's work force is engaged as professional, technical, management, and administrative personnel--the occupations generally requiring a college education (Figure 16). The second largest category of workers is clerical personnel, who constitute 18 percent of the employed population. In addition to these two groups, service workers are expanding as an occupational group, from 8 percent of the work force in 1920 to 14 percent today.

FIGURE 16. PERCENT DISTRIBUTION OF THE LABOR FORCE AMONG OCCUPATIONS, 1975*



*Statistical Abstract of the United States, 1975.

The proportion of workers employed in crafts and those working as operatives (mostly semiskilled factory work) has remained fairly constant at 13 percent and 15 percent respectively. Over the years, 6 percent of the work force seems to have been adequate to handle sales jobs. But the declining occupations, as might be expected, are laborers and farm workers, together constituting about 8 percent of the work force.

ALTERNATIVES DEPEND ON TECHNOLOGY, ECONOMY

Several forces will shape the future occupational mix. Technological developments is one. Technology is often viewed as automation, as labor-saving devices. But technological developments may also include alternatives which emphasize the role of human labor in the production process. Such a trend, together with a potential reluctance to use energy-intensive technologies, could reverse current trends, fostering more varied production jobs and fewer supervisory positions. Maintenance and repair jobs could also increase in number and importance.

The type of economy will shape the occupational mix. The employment effects of alternative national priorities have been investigated by Roger Bezdek.* Using an input-output model of the U.S. economy, he examined three alternative economic scenarios: a social welfare economy, a military defense economy, and a status quo projection. Although the total wealth (or GNP) produced in all three scenarios is the same, the level of employment varies by seven million. The social welfare alternative accommodates a total employment of 101 million compared to 94 million under the defense

*Roger H. Bezdek, *Long-Range Forecasting of Manpower Requirements--Theory and Applications*, New York Institute of Electrical and Electronics Engineers, Inc., 1974.

alternative and 96 million under the status quo alternative. Table 6 displays Bezdek's analysis of manpower requirements under "defense-oriented" and "social welfare-oriented" scenarios.

TABLE 6. VARIATIONS IN EMPLOYMENT REQUIREMENTS
IN SELECTED INDUSTRIES HIGHLY
SENSITIVE TO ECONOMIC ORIENTATION (1980)*

(Variations are calculated using the status quo orientation as the baseline; that is, employment requirements under the defense and social welfare alternatives are shown as a percentage of employment requirements under status quo.)

	Status Quo	Defense- Oriented	Social Welfare- Oriented
Military Personnel	100	125	60
Iron and Ferroalloy Ores Mining	100	112	134
Lumber and Wood Products (except containers)	100	94	110
State and Local Government Administration	100	112	122
Federal Government Administration	100	104	95
Public Health	100	70	175
Public Education	100	75	160
New Construction	100	87	137
Radio, TV, and Communications Equipment	100	109	93
Metalworking Machinery and Equipment	100	110	90

*Bezdek, op. cit., pp. 8-36.

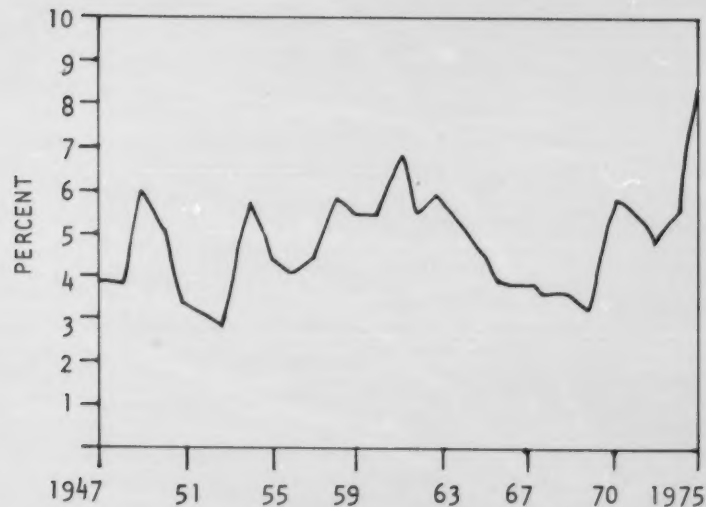
Several occupations are sensitive to the type of economy. A shift from the status quo economy to social welfare, for example, would increase employment requirements for "new construction" by 37 percent. Other sensitive industries include "public health," "public education," "iron and ferroalloy ores mining," and "radio, TV, and communications equipment."

While manpower requirements for some occupations are highly sensitive to the type of economy, it is also important to note those findings which are consistent across all three scenarios since they represent long-term trends not likely to be altered. Under all three alternative scenarios, employment increases most substantially at the upper skill levels. The middle skill level continues to represent the greatest total employment, and industrial manpower requirements at the lowest skill level change very little. Finally, projections under all three scenarios indicate that the service sector of the economy will experience the greatest increase in employment requirements while the farm sector and most middle-level manufacturing jobs will continue to decline both relatively and absolutely.

UNEMPLOYMENT: A CONTINUING PROBLEM

Based on past trends, unemployment rates exceeding 5 percent will likely characterize the future. Peacetime unemployment rates of 5 percent and higher now appear normal, since 1948 was the last peacetime year in which unemployment was less than 4 percent (Figure 17). Following the Korean War, unemployment hovered around 4.3 percent but then climbed to over 5.5 percent in 1958 where it remained until the Vietnam War. In 1971, it returned to its prewar level and reached a record high of 8.6 percent in 1975.

FIGURE 17. TRENDS IN UNEMPLOYMENT: 1947-1975*



To bring unemployment down to 5 percent by 1980, it is estimated that 12 million new jobs will be needed--almost twice the number which were created in the last five years.** Thus, even an optimistic growth scenario will probably fail to reduce unemployment to an acceptable level. Furthermore, it is important to note that unemployment is not evenly distributed throughout the labor force; accordingly, the average rate of unemployment can obscure almost catastrophic incidence of joblessness among certain segments of the

*Bureau of Labor Statistics, U.S. Department of Labor, *Handbook of Labor Statistics*; and *Employment and Unemployment during 1975*.

**See "Why Recovering Economies Don't Create Enough New Jobs," *Business Week*, March 22, 1976.

population. Since 1950, the unemployment rate for blacks has been double that of whites; since 1963, the rate of teenage unemployment has been almost three times as high as the average. For black youth, this double burden has resulted in unemployment rates approaching 40 percent. The disproportionate burden of unemployment on black youths raises the spectre "that a whole generation of black youth is growing into adulthood without access to jobs, training, or skills."*

To reduce the unemployment problems of youth, some have suggested special public employment programs, such as the Civilian Conservation Corps of the Depression Era. Others have proposed lowering the minimum wage. Former Secretary of Labor, Willard Wirtz, urges the creation of community work opportunities as part of a more flexible high school program, thereby easing the transition from school to work.**

There could be increased pressure on postsecondary educational institutions to serve as holding areas for youth to keep them out of the job market.

THE "GOOD JOB" SQUEEZE

While unemployment will stalk Americans, another very visible pressure on the job market in the future will be the number of people looking for "good" jobs. The ratio of professional and managerial jobs to college graduates has declined almost steadily since 1952 (Figure 18). By 1990, about 22 percent of the labor force will have four or more years of college education, compared to 16 percent today and 7 percent 25 years ago. And over the last 15 years, the proportion of male college graduates who have had to settle for nonprofessional/nonmanagerial jobs has increased threefold; the proportion of women has grown fourfold. Based on

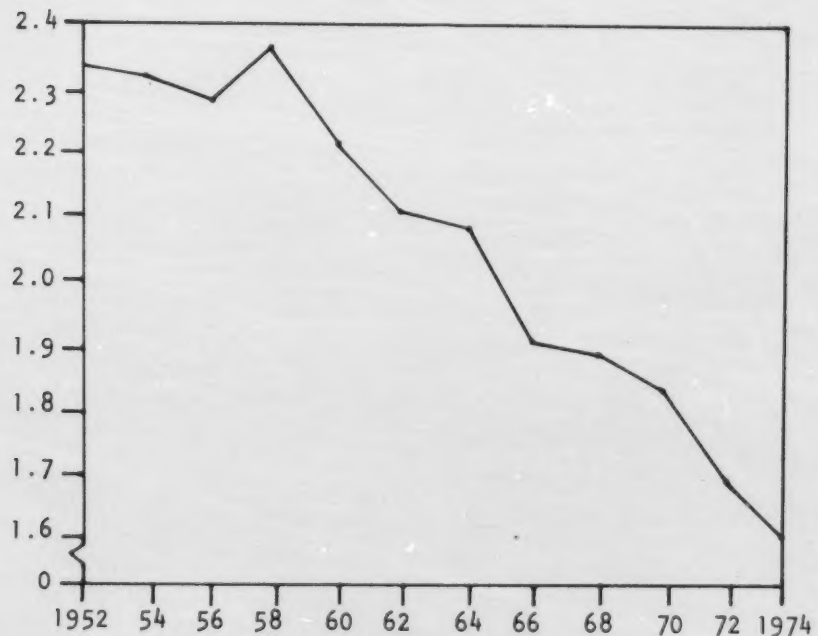
Needed: closer connection between job opportunities and available educational programs. A recent national survey suggests that only 2 of every 10 graduates trained for professional or technical jobs ever get them (W. W. Wilms, "Protecting the Vocational Education Consumer," Berkeley, CA: Center for Research and Development in Higher Education, 1974).

*Vernon E. Jordan, Jr., "Is Unemployment 'Desirable'?", *Saturday Review*, August 7, 1976, p. 15.

**Willard Wirtz, *The Boundless Resource*, Washington, DC: The New Republic Book Company, Inc., 1975.

these trends, the U.S. Bureau of Labor Statistics projects a surplus of college graduates reaching 140,000 annually by 1985. Thus, over the next decade, more than one million college graduates may not be able to find the type of jobs traditionally thought to require a college education.

FIGURE 18. RATIO OF PROFESSIONAL AND MANAGERIAL JOBS TO COLLEGE GRADUATES, 1952-1974*



On the other side of the coin, many "low status" jobs go begging. Areas with low unemployment, such as Dallas, have no "takers" for these jobs; and even in areas with

*Gorham and Glazer, op. cit.

high unemployment, such as Boston, the turnover rate is 150 percent.

The need for menial labor has grown rapidly in the last decade with the increase in the service sector. Between 1960 and 1970, for example, the number of garbage collectors doubled; the number of janitors increased 50 percent; and the number of hospital aides and orderlies burgeoned by 80 percent. While some have argued that menial labor will disappear with increasing mechanization, others point out that there are limits on what can be mechanized. Currently, 9 to 14 million persons (or 10 to 15 percent of the work force) are engaged in menial labor, and the Bureau of Labor Statistics projects that, over the next decade, openings in many low status jobs will increase faster than total employment.*

This double-edged sword of a surplus of college graduates and a burgeoning of menial jobs is intertwined with the future of postsecondary education. Several alternatives can be envisioned, each with slightly different implications for higher learning. For example, wages for menial jobs might be raised to attract workers. This strategy would, of course, tend to decrease the number of people pursuing higher education to achieve high wages, since alternative paths would be available. However, such a change seems plausible only in a full employment economy.

Assuming no major restructuring of U.S. economy or the workplace, college degrees could well become admission tickets for an increasing number of jobs formerly performed by those with only a high school diploma. The less-than-college educated would be pushed farther down the employment status

Possibility: more emphasis on inherent values of education, less marketing of education as a ticket to a good job.

*For a discussion of present and potential difficulties in filling menial jobs, see Edmund Falter Mayer, "Who Will Do the Dirty Work Tomorrow?," *Fortune*, January 1974, p. 132; and Harold Wool, "Future Labor Supply for Lower Level Occupations," *Monthly Labor Review*, March 1976, pp. 22-31.

ladder where they, unhappily but out of economic necessity, would perform the menial work. Underlying the entire economy would be a substratum of the more or less permanently unemployed who subsist on welfare and crime.

Educationally, this alternative implies no significant expansion of efforts to further ease the entry of the excluded into higher education. While the poor, the ethnic minorities, or the unemployed may not be excluded from education because of their status, only the "super" men and women will overcome the barriers to entry. It would be a zero sum, competitive society, functioning on meritocratic norms, with a large number of people trapped on the bottom. A tightening of "standards" in higher education to close the gap between unduly high expectations and economic reality would not be surprising.

CREDENTIALS FOR SCARCE JOBS

Possibility: educational institutions could be called upon to serve the career gatekeeping role by limiting the number of students who pursue particular career tracks.

This projection raises questions about current efforts to reshape the educational credentialing system. Traditionally, educational institutions have served as a credentialing mechanism for "better" jobs. Credentialing within the education system has been based on credit hours and grades. Recently, the forces for equal opportunity have been battering at this tradition which, many argue, unfairly denies opportunity to able people deprived of higher education opportunities due to past discrimination. Two approaches to dealing with this problem have emerged. One approach, based on court rulings in *Griggs v. Duke Power*, is to substitute performance tests for degrees/diplomas as job selection criteria. The other approach maintains educational credentials as prerequisites for many occupations, but opens access by giving credentials for experience. Thus, those who are barred by circumstances from

traditional college curricula would earn degrees by alternative and less time-consuming methods. (This latter approach may be rejected by excluded groups who tend to distrust nontraditional programs.)

The biggest single factor motivating people to engage in postsecondary education is often the desire for job advancement. But what will happen to the educational market if occupational entrance is no longer dependent on traditional educational credentials? Assuming that specific performance tests are substituted for degrees and diplomas, the majority might still choose to prepare for the tests by studying in an educational institution. However, the function of the educational institution would change. The traditional certification that a student had completed an appropriate regimen of course work would yield to individualized, competency-based curricula. Furthermore, formal educational institutions might face competition from other sources. With "ability-to-perform" as the standard, there is no inherent advantage in attending an accredited educational institution. A YWCA, a proprietary school, or a master tutor with demonstrated track record at preparing persons to pass performance exams will all attract students.

The second approach, which maintains the importance of educational credits but opens up alternative methods of obtaining them, will also alter the nature of educational institutions. In addition to the traditional college curricula, institutions will need to establish departments which provide, evaluate, and certify all sorts of nontraditional learning. These will have to provide personnel to supervise internships, design exams to test prior learning, and assess the academic merit of life experience. As alternative paths to a degree and proportion of nontraditional students increase, the educational bureaucracy will be subject to increasing strain since bureaucracy is based on standard units and standard procedures.

Needed: effective ways to evaluate and legitimize alternative forms of education.

All of these changes might, however, be academic if the "good" job market remains very tight. Etzioni has a different vision: under a voluntary national service scheme, the majority of young people might spend several years performing manual labor after high school.* This practice could also be established simply as a social norm. Either way, it implies more lifelong career advancement for everyone and a higher average age for postsecondary students. Alternatively, one can envision much more overlapping of menial and intellectual job roles. No one would undertake full-time menial work; rather, it would be shared by everyone in the work force along with other responsibilities. Educationally, this alternative implies a pluralistic, lifelong learning approach, perhaps with the workplace providing many more educational opportunities.

THE PROMOTION SQUEEZE

If finding a good job will be hard in 1990, getting a promotion will probably be equally difficult. A most notable characteristic of the 1990 labor force will be the concentration of workers in the 25-to-45 age bracket. Workers of this age will constitute 52 percent of the labor force under BLS projections and an even larger percent under the Institute's projections (since the higher proportion of women workers in the alternative projections are concentrated in this age bracket). The ratio of younger workers to senior workers (who generally occupy the higher positions) will thus increase

*Amitai Etzioni, *Towards Higher Education in an Active Society: Three Policy Guidelines*, Center for Policy Research, New York, 1970.

sharply. In 1972, for example, there were only 98 workers 35 to 44 years old for every 100 workers 45 to 54; by 1985, there will be 142.* Given this composition of the work force, it appears that at least some career ladders will become severely congested.

This potential "promotion squeeze" could produce a rash of midlife career changes. At present, little is known about the actual process of midlife career change; even less is known about potential career changes. The act of changing careers currently occurs mostly at the youngest adult ages. But the desire for career redirection extends well into midlife--albeit a desire that people often feel but seldom act on. Under favorable economic conditions, which would tend to put career progress ahead of job security in job-holders' minds, growing discontent among older workers and impatience among younger workers stalled at the base of the career ladder could erupt into a prolonged demand on the schools for adult career retraining.

We do not know whether individuals will opt for progress over job security; we do not know for sure how deep worker dissatisfaction actually is; most important, we cannot forecast the economic context in which these factors will come into play. Nevertheless, extrapolating from current trends, we can imagine a rather frightening scenario if no remedial programs are developed:

Needed: education for flexibility in careers.

Will worker discontent encourage corporate educational programs? Large corporations spent about \$2 billion in 1975 on direct expenses for education and training. At least 4 million employees participated in "in-house" courses (Seymour Lusterman, "Education for Work," The Conference Board RECORD, May 1976, pp. 39-44). However, corporations still seem to feel that basic skills--particularly language skills--are the responsibility of schools and colleges.

What is the role of unions in corporate-sponsored education?

*Peter A. Morrison, *The Demographic Context of Educational Policy Planning*, The Rand Corporation, Santa Monica, California, P-5592, 1976.

WORKER DISSATISFACTION: A SCENARIO

It is 1990. The United States is racked by internal divisions and disorder. Racial polarization and class conflict abound. Corporations complain that they are hamstrung by extensive government regulations. Social commentators bewail the underutilization, hostility, and sullenness of the work force. Productivity has declined, and spot shortages increasingly plague the economy.

Equal opportunity remains the law, if not the spirit, of the land. And racial minorities and women have achieved proportional representation in semiskilled blue collar jobs and among lower-level white collar and service sector jobs. Minorities and women, however, are still substantially underrepresented in corporate management and other powerful professional positions. While there is no outright discrimination on the grounds of color or sex, the maintenance of rigid entrance qualifications--an M.B.A. degree, engineering credentials--has limited the numbers of women and minorities entering the professions; the time gap between increased opportunities for these groups and the education necessary to take advantage of the opportunities has not been closed. In fact, as the percent of the labor force with college education increased, the credential requirements increased, screening out many minorities, women, and other talented persons.

The limited implementation of equal employment opportunity has produced widespread resentment and frequent flareups of racial violence. The

unfulfilled promises of affirmative action have embittered racial minorities and women, while their accomplishments have led many whites to feel disenfranchised: the gains made in equal employment at the skilled and unskilled levels have been achieved at the expense of white men who are now displaced in favor of formerly excluded groups. The discontent among both minority and majority groups is manifested in fights on the factory floor, confrontations between the jobless and the employed, and increased hostility between the excluded population and those individuals (minorities, women, and white men alike), who have made it in the white world.

The attempt to implement EEO within the traditional structure of job organization has amplified the pressure from the population bulge and higher job expectations. Competition for jobs is intense, and those who fail to obtain rewarding jobs have become resentful members of the working class. The labor force is sullen; it sabotages production whenever possible and takes no initiative in improving operating procedures. Drudgery, tedium, and authoritarianism now characterize the average job since employers turned their backs on job enrichment in the late 1970s on the grounds that it was too expensive and led to worker demands for a share in management. Absenteeism and tardiness are rampant.

Such worker disenchantment, together with underutilization of the talents of the labor force, has handicapped the United States in the world market:

the country is not keeping pace with technological developments in other countries, and the quality of U.S. goods has generally declined. And at home, production bottlenecks have led to periodic shortages of a variety of consumer goods. The result is a pervasive resentment toward corporations which are seen as failing to serve the public good.

In short, discontent and disorder prevail. The underutilization and hostility of the work force have prevented the economy from reaching its potential. And the legitimacy of the traditional economic and political system of the country is under widespread attack.

CONCLUSION

By 1990, the work force in the United States will be larger both in absolute numbers and as a percent of the population. Unemployment, especially minority unemployment, will almost certainly be a major problem; so will underemployment of the highly educated. Whether or not the above scenario materializes, the next 15 years are likely to be a period of change and redefinition in the work force. Individuals will be asking basic questions about the relationship between work and their life goals. And society as a whole will have to juggle issues like the availability of work and the desirability of alternative working arrangements. As a result, the personal working history of individuals is likely to continue to change: more part-time work, more career changes, and probably earlier retirements for many.

POLITICAL ECONOMY:
THE IMPACTS OF LIMITS TO GROWTH

Many of the most pressing political and economic issues concern the role of the individual in society. What are the individual's rights and responsibilities in society? What is society's responsibility to the individual? Similarly, which decisions fall in the private domain of the individual and which are properly "collective" decisions? Answers to these questions are constantly renegotiated through the political process and the marketplace, and future political and economic trends are typically the product of today's negotiations.

In recent years, a new theme has emerged in these negotiations: limits to growth. Stirred by the environmental movement of the late 1960s, the limits argument was fully articulated in the book *The Limits to Growth*.^{*} This book reported the results of a study, sponsored by a group of international businessmen known as the Club of Rome. The study used a mathematical model of the world ecosystem to explore the relationships among variables such as world population, food, pollution, and resource consumption. The conclusions were very pessimistic and very controversial.

Subsequent efforts have refined the modeling approach and produced varied conclusions, but still emphasize the importance of limits.^{**} And while experts continue to

^{*}Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III, *The Limits to Growth*, New York: Universe Books, 1972.

^{**}See, for instance, Mihajlo Mesarovic and Eduard Pestel, *Mankind at the Turning Point*, New York: E. P. Dutton & Co., 1974.

debate the relative merits of research on limits to growth, a basic recognition of limits is seeping into public consciousness. Governor Brown of California is probably best known for his public stance on this issue; the theme even appeared in President Carter's inaugural speech:

We have learned that "more" is not necessarily "better"; that even our great nation has its recognized limits, and that we can neither answer all the questions nor solve all the problems.

Basic to the discussion of limits is economic growth. Over the past 50 years, the growth rate of the U.S. economy has averaged 4.5 percent annually. However, a slower growth rate seems probable for the future. Two major constraints on future economic growth are the declining reserves of non-renewable resources (such as oil, iron, and minerals) and the increasing cost of restoring and maintaining minimal environmental equilibrium (particularly, clean air, clean water, and fertile land). A further constraint on U.S. economic growth is the probable long-range decline in the proportion of world's resources controlled by the United States. Presently, the United States, with just 6 percent of the world's population, consumes one-third of the world's resources. It seems unlikely that this international economic distribution will continue indefinitely.

For the near future, the economy will continue to grow, but at a more modest rate than that which characterized the past. In the long term, however, the economy could directly approach a "steady state."*

In this chapter, we have chosen to explore some of the political economic implications of the question of limits.

*Herman E. Daly, *Toward a Steady State Economy* (San Francisco: Freeman and Company, 1973) discusses the economic implications of a steady-state society as well as the ecological and moral constraints on unlimited growth.

While other approaches could be taken, the limits argument raises societal issues which are basic to the political economic context of the United States in the next 10 to 15 years. These issues include: the distribution of income, the provision of social services, the role of government in the economy, and the role of the individual in government.

INCOME DISTRIBUTION: LIMITS CHALLENGE EQUITY

If the position of the poor does not improve, will they be able to take advantage of educational programs? (More financial support will be needed.)

The pattern of income distribution in the United States has remained close to constant since the Second World War. The poorest fifth of the population receives about 5 percent of the total national income while the richest fifth corners more than 40 percent of the total (Table 7). However,

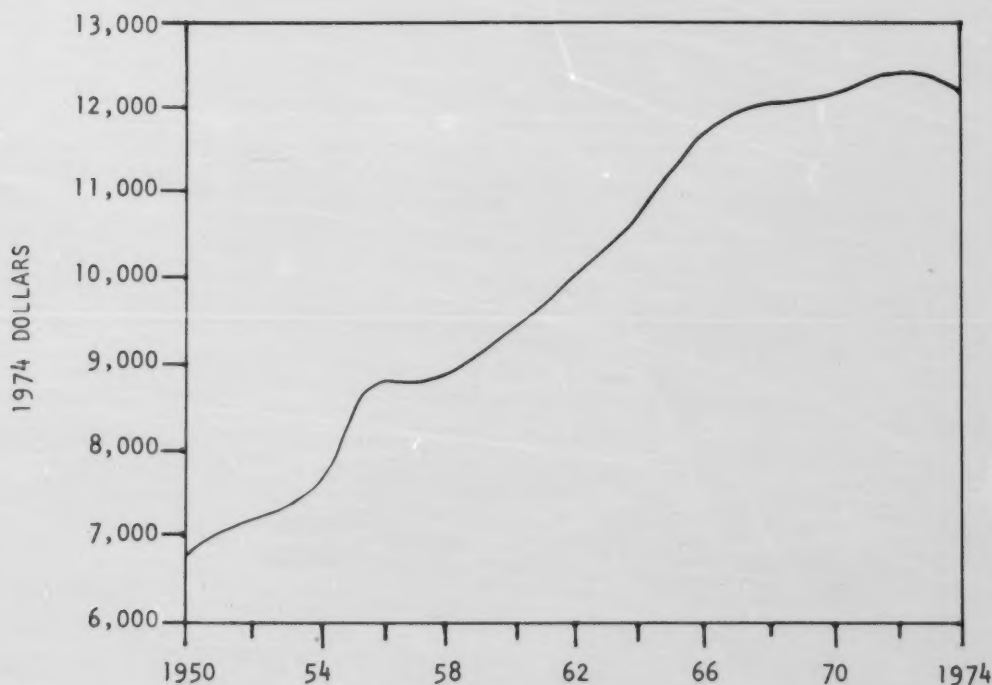
TABLE 7. DISTRIBUTION OF FAMILY INCOME*
(percent)

	<u>1947</u>	<u>1973</u>
Lowest Quintile	5.1	5.5
2nd Quintile	11.8	11.9
3rd Quintile	16.7	17.5
4th Quintile	23.2	24.0
Highest Quintile	43.3	41.0

*Statistical Abstract of the United States: 1974, Table 619, p. 384. The United States lags behind most industrialized market-economy nations in reducing income inequalities. According to a recent survey by the Organization for Economic Cooperation and Development (OECD), only France and Spain record greater inequalities than the United States.

despite their disproportionately small share of income, the poor have experienced a rise in their standard of living due to the steady growth of total income. Now, the specter of very limited growth challenges their ability to improve their condition. While family income grew at an average annual rate of 3 percent from 1959, gains have not been forthcoming in the last five years (Figure 19).

FIGURE 19. GROWTH IN MEDIAN FAMILY INCOME, 1950-74*

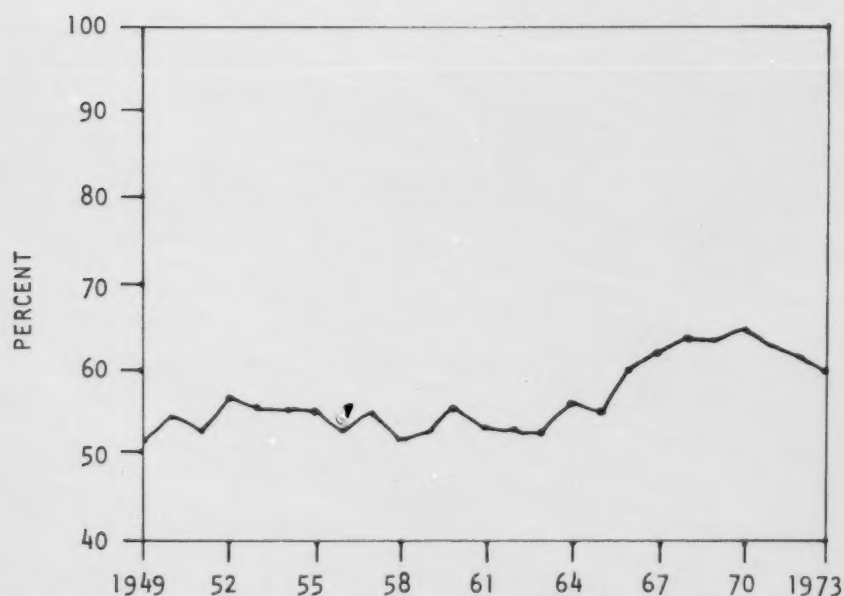


*U.S. Bureau of the Census, "Money Income in 1974 of Families and Persons in the United States," *Current Population Reports: Consumer Income*, Series P-60, No. 101, January 1976.

MINORITIES LOSE THE MOST

The tapering of median family income is particularly threatening to ethnic minorities. Figure 20 shows the ratio of black to white family income since 1949. In that year, the median income for a black family was only 54 per cent of that for a white family. Furthermore, fluctuations since 1950 are revealing: the gap between black and white families has diminished in periods of economic expansion while it has grown in times of recession. These inequalities may grow even more pronounced as more white wives enter the work force and expand the income of white families. This opportunity for increasing family incomes is not available to black families: the majority of black wives have always been employed.

FIGURE 20. RATIO OF BLACK TO WHITE FAMILY INCOMES*



*Lester Thurow, "The Economic Progress of Minorities," *Challenge*, March/April 1976.

UNEQUAL WAGES, TOO

The distribution of wages and salaries is more uneven than the distribution of income (Table 8). And here again,

TABLE 8. DISTRIBUTION OF PERSONAL WAGE
AND SALARY EARNINGS*

	(percent)	
	<u>1948</u>	<u>1973</u>
Lowest Quintile	2.6	1.7
2nd Quintile	8.1	7.8
3rd Quintile	16.6	16.1
4th Quintile	23.4	26.8
Highest Quintile	49.3	47.6

minorities fare poorly. Since 1955, the average wages of a black man working full time have risen from 56 percent to 68 percent of the average white wage.** At this rate, it would take him 75 years to catch up with his white counterpart.

The picture for women is even more bleak. Black women have obtained virtual parity with white women,*** but women

*Ibid.

**Ibid.

***The median earnings of black women who worked year-round, full-time were 92 percent of their white counterparts in 1974. (U.S. Bureau of the Census, "Money Income in 1974 of Families and Persons in the United States," *Current Population Reports: Consumer Income*, Series P-60, No. 101, Table 61, January 1976.)

as a group have far lower earnings than men--and the gap has worsened in recent years. In 1974, the median wage for women working full-time was only 57 percent of the male median. And education does little to improve this situation. A college education increases one's income relative to those of the same sex and race who do not attend college; however, it does not narrow the gap between sexes and races. Thus, a college-educated woman earns approximately the same as a white male who has only completed elementary school.

TABLE 9. EFFECT OF EDUCATION ON EARNINGS
OF FULL-TIME, YEAR-ROUND CIVILIAN
WORKERS, 25 YEARS AND OLDER*

<u>Educational Attainment</u>	<u>Median Income</u>	
	<u>Women</u>	<u>Men</u>
8 Years Elementary	\$ 5,606	\$ 9,891
4 Years High School	7,150	12,642
4 or More Years College	10,357	17,188
All Educational Levels	7,370	12,786

THE PROVISION OF SOCIAL SERVICES: A BATTLE FOR SHARES

In a steady-state economy, one group cannot gain unless another loses. Relative shares thus become all-important.

*U.S. Bureau of the Census, "A Statistical Portrait of Women in the U.S.," *Current Population Reports*, Series P-23, No. 58, 1976.

And some early battles are already being waged to equalize the shares. Attempts to change the rate structure of public utilities to favor the less wealthy are one example. So is the recent California Supreme Court decision that inequalities in school spending due to differing local property values are unconstitutional.* Perhaps most obvious are the proposals and counter-proposals for social insurance and transfer payments.

With the decline in their relative earnings, the poorest Americans have only been able to maintain their share of total income through government transfer payments.** Without such programs as Aid to Families with Dependent Children, Social Security, and disability allowances, the relative income shares of the bottom fifth of the population would have shrunk. (It has been estimated that 60 percent of the income received by the poorest quintile comes from transfer payments.***) Now, just as limits to growth make any gains unlikely, there is growing clamor to stabilize or even reduce transfer payments. Indictments of inflationary government deficits, warnings about the possible bankruptcy of Social Security, and the growing rumble from hard-pressed taxpayers suggest that transfer programs may be insufficient to prevent further inequities in the distribution of income.

**Serrano v. Priest* (L.A. 30398) decided December 30, 1976.

**Some authors have argued that in-kind transfers have actually increased the relative wealth of the poor. See, for instance, Edgar K. Browning, "How Much Equality Can We Afford?" *The Public Interest*, No. 43, Spring 1976, pp. 90-110.

***John L. Palmer and Joseph J. Minarik, "Income Security Policy," in Henry Owen and Charles L. Schultze, eds., *Setting National Priorities: The Next 10 Years*, Washington, DC: The Brookings Institution, 1976, p. 530.

Accordingly, several reform strategies have surfaced, including guaranteed annual income, guaranteed full employment, and national health insurance.

GUARANTEED ANNUAL INCOME: MORE EQUITABLE AND EFFICIENT?

Would a guaranteed annual income encourage more adults to undertake further education?

Proponents of guaranteed annual income argue that it is a more equitable and a more efficient way to provide income support to those unable to obtain a minimum standard of living. Present categorical programs do not provide aid to all of those in need, such as husband-wife families in poverty. A guaranteed annual income would. Also, a guaranteed annual income would reduce administrative costs associated with current transfer programs.

However, the obstacles facing such a reform are significant. Consider the fate of former President Nixon's Family Assistance Plan which was opposed by both liberals and conservatives. A legislative mandate for a guaranteed annual income scheme may depend upon public recognition that the economy cannot provide jobs for all those able to work. Also, the cost of providing an adequate guaranteed annual income would be great; hence, a thorough-going tax reform would seem to be a necessary prerequisite.

FULL EMPLOYMENT

The proper role of government in ensuring full employment has been widely debated. Some proposals, such as the Humphrey-Hawkins bill, would establish the government as employer-of-last-resort to ensure jobs for those unable to

find work in the private sector.* Federal taxes would finance the hiring of the unemployed to perform many services which simply are not provided at present. It is ironic that it has proved easier in the past to fund transfer programs than public employment programs. But transfer programs have fewer direct costs and so appear to be more economical. Nevertheless, the more expensive public employment programs would also provide additional societal benefits, such as cleaner streets or better services to the aged.

Others, concerned about bureaucratic inefficiencies and resulting high costs, would limit government's role to stimulating job creation in the private sector through subsidies to employers, tax incentives, and other measures.

Full employment programs would, of course, benefit only those able to work. And even to be successful with this group, such programs would have to foster changes in the wage structure. According to Eli Ginzberg, economist and head of the National Commission for Manpower Policy, only 40 percent of all jobs currently pay enough to permit a wage-earner to support a family.**

A broader question raised by full employment programs is whether our traditional notions of tying work to income will be valid in the future. It may be that neither traditional welfare nor traditional workfare programs will prove effective in discouraging wasteful consumption while assuring basic necessities to all in a limited-growth society.

*"The Full Employment and Balanced Growth Act of 1976," introduced into Congress as H.R. 50 and S. 50 in March 1976 by Senator Hubert Humphrey and Representative Augustus Hawkins.

**Quoted in *Working Woman*, vol. 1, no. 2, December 1976, p. 5.

NATIONAL HEALTH CARE: A THIRD APPROACH TO EQUALIZATION

After food, housing, and transportation, medical care is the largest single expense for Americans. Accordingly, reform of the financing and organization of health care in the United States could be an important move toward equalization of income. Several proposals for shifting the burden of medical expenses from individuals to society at large are before Congress and enjoy wide public support. The type of system which will eventually be enacted will depend not only on financial factors, but also on changing concepts of medical care. Medical practice is under fire today, and much of the antagonism stems from a debate over its traditional focus: many doubt that it is directed at the fundamental causes of poor health. They suggest that the disease treatment model of health care has been applied too narrowly and may be obsolete. In 1900 in the United States, the most prominent fatal diseases were pneumonia, influenza, and tuberculosis. Today, they are cancer and heart disease. The causes of former killers invite a direct medical solution. But cancer and heart disease may be more closely related to environmental factors and patterns of individual behavior. Thus, while the key to large-scale reductions in turn-of-the-century diseases was medical technology, the key to large-scale improvement in health today could be a very different approach.

Probable new training programs for non-M.D. health specialists.

In its discussion of health care, the Council of Economic Advisors addresses the possibility that

. . . large additional expenditures on medical care may be a very costly way of obtaining small improvements in measured health status for this country. Apart from medical care, there are other ways in which the Nation's health may be improved. . . . More important may be further research on, and the spread of current knowledge about, the effect of life-style and environment on health status.*

**Economic Report of the President for the Year 1975*, Washington, DC: U.S. Government Printing Office, p. 121.

A publicly financed health program based on these principles would focus on preventive measures. For the individual, health education would be a primary strategy; and at the societal level, preventive measures would have to include programs to eliminate pollution and other environmental causes of disease.

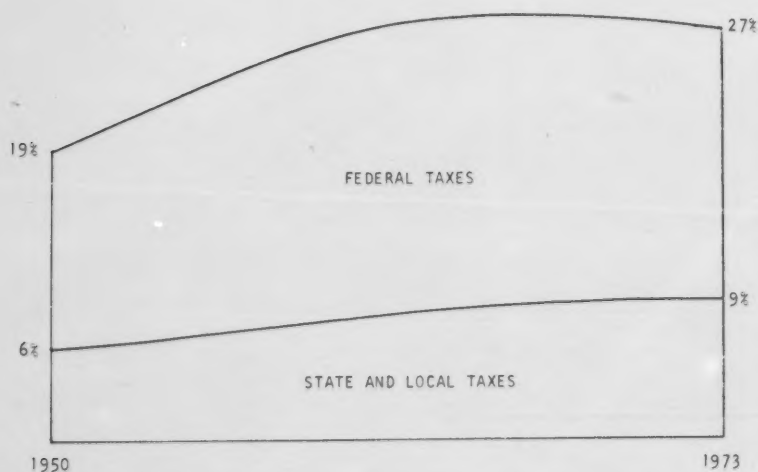
Needed: public-oriented health education (i.e., personal and family health care)

Medical schools and other institutions might train students to look for and agitate about environmental causes of illness.

FEWER RESOURCES, MORE PUBLIC CONTROL

All of these proposals--guaranteed annual income, full-employment plans, and national health care plans--suggest an increased role of the government in allocating shrinking resources. And in fact, there are indications that control of resources is shifting from the private to the public sector. One such indicator is the growth of taxes as a proportion of gross national product (see Figure 21).

FIGURE 21. TAX REVENUES AS A PERCENTAGE OF GROSS NATIONAL PRODUCT*



*Derived from *Statistical Abstract of the United States: 1975*.

Also, there has been a steady decline in the share of national income spent by individual consumers. Before the Second World War, personal consumption expenditures represented over 70 percent of total national income. This share declined to 63 percent by 1970 with a corresponding increase in the proportion spent by government (Table 10).

TABLE 10. GROSS NATIONAL PRODUCT*
(percentage distribution)

	<u>1930</u>	<u>1950</u>	<u>1970</u>	<u>1975</u>
Personal Consumption Expenditures	77	67	63	64
Government Purchases of Goods and Services	10	13	22	22
Gross Private Domestic Investment	11	19	14	12
New Exports	1	1	5	1

While the public--or government--share of national income has not increased in the last few years, it is unclear whether this freeze represents a reversal of the long-term trend toward increased social allocation of resources or merely a temporary pause. Certainly, national priorities will be a major influence. The implications of alternative priorities can be examined using Bezdek's economic input-

*Statistical Abstract of the United States: 1975; and U.S. Department of Commerce, Survey of Current Business, July 1976.

output analysis.* Holding GNP constant, he examined the implications of three alternative assumptions about future national priorities: a social welfare economy, a "status quo" economy, and a defense-oriented economy. The impact of these alternative assumptions about national priorities is illustrated in Table 11. The figures here are, of course, only estimates and merely provide a frame of reference about proportions under the various scenarios.

Public sources of educational financing will be unusually unstable.

TABLE 11. ECONOMIC ALTERNATIVES FOR 1980**

	<u>Social Welfare Scenario</u>	<u>Status Quo Scenario</u>	<u>Military Defense Scenario</u>
Gross National Product (GNP) in 1958 Dollars	\$1.1 trillion	\$1.1 trillion	\$1.1 trillion
Personal Consumption Expenditures	53% of GNP	60% of GNP	61% of GNP
Government Purchases of Goods and Services	32% of GNP	24% of GNP	22% of GNP
Total Employment	101 million	96 million	94 million

*Bezdek, op. cit. Bezdek's research utilizes a modified version of the manpower forecasting model at the University of Illinois Center for Advanced Computation (CAC). While the CAC model allows the simulation of detailed manpower requirements on the basis of shifting social priorities and distributions of federal expenditures, caution must be used in interpreting the results since such a large-scale integrated model requires a number of simplifying assumptions concerning the structure of the economy and the reconciliation of largely incompatible data sets.

**Ibid., Chapter 8, pp. 27-9. Dollar amounts are in 1958 dollars; Bezdek's assumptions about 1980 GNP are in common hose of the Bureau of Labor Statistics.

"People-intensive" education will fare best in what Bezdek calls a "social welfare/conservation" society.

Not surprisingly, the social welfare scenario, in contrast to the other alternatives, implies a significant shift of resource control from the private sector (personal consumption expenditures) to the public sector (government purchases). The declining proportion of GNP devoted to personal consumption expenditures, projected at 53 percent under the social welfare alternative, would make the United States more comparable with such social welfare-oriented nations as Sweden (54 percent) and Germany (54 percent).

GOVERNMENT REGULATION: LESS INSTITUTIONAL AUTONOMY?

The expanding role of government in the economy is also reflected in changes in government regulation. Two major philosophies of regulation are particularly important. The first is outcome oriented: the regulator specifies the outcome, but the regulated institution determines the process by which the outcome is achieved. Thus, a regulation might specify that lawn mowers cannot cause more than one death per thousand user hours or that the ethnic composition of university faculties must reflect that of the population as a whole.

A second philosophy focuses on the process. A lawn mower manufacturer might be required to make 10 percent of the moving parts from plastic; universities would have to advertise nationally for faculty positions and ensure blind examinations of resumes. If the lawn mower manufacturer and the university hiring committee follow these processes, they are then excused from any liability for shortcomings in the results.

To illustrate the relevance of these regulatory alternatives to education, consider the area of accreditation of

educational institutions. There is some indication that the federal and state governments may become more directly involved in accreditation. Outcome-oriented regulation in this area would specify results: to be accredited, an institution would have to show that 90 percent of its graduates receive a certain score on specified national exams or that 80 percent of its graduates are placed in jobs for which they were trained. Process-oriented regulation, on the other hand, would specify educational resources which must be provided to students, such as the number of hours of classroom instruction in certain subject matter or internship hours or the number of volumes in a library.

At present, students are almost completely free to study any subject they wish, and universities are free to establish the departments they wish. However, within a steady-state society, such freedom of choice may be curtailed in favor of directing students, more or less forcefully, into professions of critical shortage. For example, medical education funding legislation, now under debate, would require schools to produce certain percentages of various medical specialists in order to obtain federal subsidies and would grant preferential subsidies to medical students preparing for legislatively preferred practices.

The future may also see an expansion of public control through government regulation over what can be produced. Already, such restrictions have been imposed for reasons of personal safety and protection of the environment (e.g., federal inflammability requirements for clothing or some of the state bans on throwaway beverage containers). In the future, efforts to reduce consumption may include prohibitions on the production of nonessential consumer items which squander scarce resources. High energy efficiency, for

Regulatory environment will continue to increase in importance for educational institutions (more forms to fill out!).

Possibility: increasing centralization of educational power?

instance, could well be required of many products in the near future. The allocation of scarce raw materials and the control of wasteful consumption are also emerging as key issues. The choice between regulations or reliance on market mechanisms remains debatable, but the former seems more likely than the latter. Ultimately, the extent of federal regulation will be affected by the degree to which the United States moves toward centralized planning procedures.

NATIONAL ECONOMIC PLANNING: A LARGE-SCALE RESPONSE TO LIMITS

The stop-go behavior of the U.S. economy, concern about depletion of nonrenewable natural resources, and the lack of coordination in the government's economic activities and policies have all sparked an increased interest in national economic planning. Economic activity, say its advocates, should be coordinated to attain social and economic objectives, as determined through the political process. Explicit quantitative goals should be established for economic performance in such areas as Gross National Product, total employment, new housing, and investment in new energy sources. A national economic plan would also specify governmental actions--such as tax incentives, investment guarantees, and public works projects--which would induce achievement of the goals.

Several steps toward a national planning framework have already been taken. One example is the new coordinated budgeting process adopted by Congress; this process enables Congress to exercise greater control over the total size of the budget and relative spending priorities within the overall budget. In addition, several bills aimed at various aspects of a national growth policy have been introduced in

National economic planning would demand explicit justification of most costs.

Congress, though with varied degrees of support. These include planned credit allocation, national land use legislation, and the Humphrey-Hawkins full employment bill, already mentioned.

Proponents of *some form* of national economic planning can be found in all sectors of society--among business leaders such as Felix Rohatyn and Henry Ford II; among labor leaders like Leonard Woodcock of the UAW; among political leaders like Senator Humphrey (D-Minnesota), Senator Javits (R-New York), and Nobel Prize-winning economist Wassily Leontief; and among consumer groups and concerned citizens. The debate over the actual content of such programs, however, is spirited. Many advocates of economic planning want to increase citizen participation in the establishment of economic priorities; others are primarily concerned with more efficiency and rational action within the broad confines of the present economic structure. According to these advocates, the positive results of comprehensive planning in many Western European countries demonstrates that planning can be both productive and democratic.

Increased national planning implies an activist stance toward the future and could involve an expanded role for public decision-making. On the other hand, it could mean an expansion of the present cozy relationship between individual regulatory agencies and the industries they regulate. Citizens could be completely shut out if planning becomes primarily a negotiation between government bureaucrats and business representatives. National planning in both Japan and France has apparently encouraged a much closer alliance of government and business than is thought to be legitimate in the United States.

MORE COMPREHENSIVE PLANNING FOR EDUCATION, TOO

"Efficiency" could become a new byword in education. However, too much structure could decrease efficiency.

Paralleling the push for economic planning is increasing interest in a more comprehensive approach to postsecondary education. Under the impetus of the coordinating commissions mandated by Section 1202 of the 1972 Education Amendments, many states have undertaken comprehensive assessments of postsecondary education needs and resources and have developed integrated planning bodies to coordinate all sectors of secondary education--public, private, and proprietary. For instance, the California Legislature's Joint Committee on the Master Plan for Higher Education recently completed a study on educational needs of adults;* in particular, the study considers how adult learning needs are likely to grow through the remainder of the century, given demographic trends and expected industrial development. Educational services presently provided within the state are examined, and unmet needs are pinpointed. The study concludes with recommendations for meeting these needs, including changes in existing institutions, new educational services which should be established, and mechanisms for improving planning in the future.

The Washington State plan, "Planning and Policy Recommendations for Washington Postsecondary Education, 1976-82,"** is another example of a comprehensive approach to educational planning. After defining its assumptions about the future, the plan examines probable future developments, particularly population changes. The plan then examines present and

*Richard E. Peterson and J. B. Lon Hefferlin, *Postsecondary Alternatives to Meet the Educational Needs of California's Adults*, Sacramento, California, 1975.

**Council for Postsecondary Education, Olympia, Washington, 1976.

potential educational offerings from the perspective of four broad goals--responsiveness, access, diversity, and coordination. Concluding the plan are recommendations for future action.

In the future, the role of state planning commissions might extend to comprehensive evaluation of alternative educational strategies and subsequent elimination of those found less attractive. For example, if improved vocational training could be obtained for less by subsidizing employers to assume this responsibility, educational institutions might be precluded from investing resources in such programs.

Also, national planning in postsecondary education will probably mean that future directions in education will be more explicitly linked to other aspects of national policy. For instance, under national planning, regional development priorities and economic production goals would more directly affect educational decision-making. Manpower planning would also become a real option within the framework of comprehensive national planning. At present, manpower planning is not feasible, since the absence of a long-range plan targeting future output in such areas as medical services, energy production, and transportation facilities makes it impossible to formulate plans to train the required number of doctors, solar engineers, or airplane mechanics.

Possibility: fewer curricular choices open to students.

National economic planning in its varied forms provides a challenge to past procedures. Such a challenge could certainly be healthy and--especially at first glance--looks very appealing. However, bureaucracy plus planning doesn't often equal vitality. The sluggish 5- and 10-year plans of the Soviet Union provide insight into the weaknesses of national planning, as well as its capacity for getting things--at least *some* things--done. National planning can limit

one's options; it can invite missed opportunities. Its systematic strengths translate as bureaucratic rigidities. National planning is hopeful, but its implementation will require a built-in flexibility likely to be very difficult to achieve.

SIMPLE LIVING: A SMALL-SCALE RESPONSE TO LIMITS

E. F. Schumacher's book *Small is Beautiful* (Harper, 1973) has raised the possibility of a shift toward values of self-sufficiency and "appropriate" (or "intermediate") technology. Self-sufficiency means a new interest in family gardening, solar heating, waterless toilets, and a host of other small-scale technologies to make the household independent of costly goods and services. A more recent book, *Home, Inc.* by Scott Burns (Doubleday, 1975), takes the case further by suggesting that we are already experiencing a significant shift from market economy to household economy. Households are creating an independence from market structures by contributing their own labors to personally produce a growing portion of their own needs. Such a trend, if it should continue,* could have profound effects on U.S. society--far beyond the small-scale effects on individual households.

A move toward self-sufficiency could become a counterforce to moves toward centralized planning. Self-sufficiency

*A growing number of local activities have begun all around the United States. Several newsletter/journals now exist, including: *RAIN: Journal of Appropriate Technology*, 2270 NW Irving, Portland, OR 97210; The New Alchemy Institute, 15290 Coleman Valley Road, Occidental, CA 95465; *Self-Reliance: The Institute for Local Self-Reliance*, 1717 - 18th Street, NW, Washington, DC 20009.

might imply (though not necessarily) a rise in individualistic attitudes which would reject centralization. Certainly the centralization-decentralization dynamic will be crucial in shaping general societal directions over the next 15 years.

MORE CITIZEN PARTICIPATION

Whether one adopts a large-scale planning response to limits or a small-scale emphasis on simplicity, the role of the citizen in decision-making could increase in the future. Traditionally, this role has been defined in terms of the electoral process. According to the traditional view, citizens influence public policy through their ballots. The more concerned citizens would become active in a political party where they could exert greater influence on the choice of candidates. Increasingly, however, this mode of citizen participation is being bypassed in favor of more direct citizen action focusing on issues rather than political candidates. The combined dues-paying membership of eight national citizen action groups exceeds the number of individual contributors to the Democratic and Republican National Committees. And the voluntary contributions to these eight groups is only \$1 million less than that formally received by the two national political parties.*

Needed: civic education (e.g., for participatory planning).

*The eight national citizen action groups are: Common Cause, Sierra Club, Public Citizen, Environmental Defense, Friends of the Earth, Natural Resources Defense Council, Environmental Action, and Zero Population Growth. Their total membership was 618,000 and total income (excluding foundation grants) was \$12 million. By comparison, the Democratic and Republican Committees together received a total of \$13.5 million from 520,000 individual contributors. The Democratic Party looks particularly weak by these indicators, raising only \$2 million from 200,000 contributors. It should be noted, of course, that these are only contributions made directly to the party and do not include contributors to candidates. Two citizens' action groups, Common Cause and the Sierra Club, each raised more money from individual contributions than the Democratic National Committee. Source: Milton Kotler, "New Life for American Politics," *The Nation*, October 30, 1976.

Such direct comparison is difficult, but the figures do suggest the potential strength of citizen groups.

The growing number of referenda (in those states allowing citizens to place initiatives on the ballot) is another indicator of the expanded desire for direct citizen participation in political decision-making. Increasing citizen interest in shaping future social and economic developments has found expression in such movements as Hawaii 2000 and Alternatives for Washington.* These endeavors involve numerous citizens in assessing the implications of alternative policies and subsequently expressing their choice of desired goals.

If the risk of a society commandeered by technocrats could be avoided, national economic planning could afford citizens much greater participation in the choice of economic goals. Economist Wassily Leontief has even called for the presentation of alternative economic scenarios to be subject to public debate; the final choice would be made through the political process.** Each scenario would offer alternative packages of goods and services. One alternative might place priority on greater employment and environmental clean-up, for example, while another might be geared to expanding the quantity of consumer goods. The Center for Economic Alternatives urges a planning process emphasizing local initiative and decentralization. The role of national plans would be to assist localities in reaching their own locally determined goals.

*See, for instance, the report *Alternatives for Washington*, Office of Program Planning and Fiscal Management, State of Washington, House Office Building, Olympia, WA 98504, 1975.

**For a discussion of Leontief's proposals, see his article "National Economic Planning: Methods and Problems," *Challenge*, July/August 1976, pp. 6-11.

A key issue for the future is whether public involvement in future planning can be more directly linked to decisions made by legislatures and regulatory bodies. Such links might include expansion of the referenda process, although extending referenda procedures to the national level would probably require a Constitutional Amendment. If alternative national economic plans were presented by the major political parties during election campaigns, national planning might be more responsive to the public interest.

CONCLUSION

Learning to live with limits will undoubtedly have its traumas over the next 15 years. Our economic worldview has been grounded in growth; and growth implies the opportunity for all social classes to improve without redistributing shares of wealth. However, a limited or steady-state economy means a fixed resource pie and probable clashes over how it should be divided. New social movements--such as "small is beautiful" economics and participatory planning--may have substantial effects, or we could see an increased centralization of political and economic power. An unstable period in the political economic context seems inevitable. The United States is only beginning to learn how to live with limits, and it remains to be seen exactly which parts of society will be most constrained.

LEARNING INVENTIONS:

HOW STUDENTS WILL LEARN

Learning inventions are aids to teaching or learning. They may be either technological or social, "hard" or "soft," slightly new or revolutionary. In the late 1970s and 1980s, many such inventions will be struggling for life; this chapter describes some of those which could alter the ways in which students learn.

COMMUNICATIONS MACHINES:

EDUCATIONAL TECHNOLOGY IN THE MAKING

Educational technology is a tortoise which used to be a hare. Its hare period grew out of the 1950s and 1960s as audio labs, computer-assisted instruction (CAI), and other advanced technologies burst forth, bubbling with promises. In the 1970s, however, educational technology is clearly tortoise-like in its efforts to become part of everyday education. And for many, it is not a tortoise to be trusted. There is a pervasive sense of having been burned, as educational closets overflow with unused technology.

In spite of its current plodding, however, educational technology is changing the nature of education. In particular, communications machines are emerging which could provide learning resources--often quite apart from conventional educational institutions. Here, the machines most likely to succeed are not completely new; they are direct descendants of familiar technologies: the telephone, television, computers, and satellites.

Matching of medium to educational task is basic; use media selectively.

Important: identify the learning potential of existing technologies.

THE TELEPHONE: AN INTERMEDIATE TECHNOLOGY

The telephone, now 100 years old, is a powerful learning resource with a low profile. Nobody thinks of the telephone anymore; they just assume it is going to be there. But the telephone provides the potential for a communications network of profound importance to education. Learners in remote locations or those who are hampered by handicaps usually have access to telephones. And these telephones could connect them to other learners and information sources, if adequate programs were available. Moreover, the telephone handset which is now so common may be only the beginning. Written messages, drawings, computer signals, and several other kinds of messages can also be transmitted along inexpensive telephone lines. Even still pictures of students and teachers--a "slow-scan" television--can be exchanged, using a normal telephone line.

Media can bring educational resources to remote students--what special learning needs will they have?

With this kind of power, the telephone can provide a "classroom" for about 25 cents an hour.* And this classroom is convenient for many people who would not attend a traditional institution. consider the following scenario:

At 5:45 p.m., lawyer Mary Mendoza arrives at the local courthouse for her continuing education class in tax law. She helps the district attorney and fellow students set up the special telephone equipment which looks rather like an old-fashioned microphone. Promptly at 6:00 p.m., they flip the switch and are connected to the instructor in the state capitol as well as classmates in six other small towns. The instructor lectures on recent changes in the tax code concerning

*This is the operating cost (not including the instructor's time) estimated for the largest of the teaching-by-telephone systems, the University of Wisconsin-Extension (over 25,000 students per year). See Lorne A. Parker and Betsy Riccomini, eds., *The Status of the Telephone in Education*, Madison: University of Wisconsin-Extension Press, 1976, p. 5.

Needed: effective ways of introducing new technologies in educational environments in humane ways.

depreciation. Slowly the new formula for calculating depreciation allowances is printed out on the electronic blackboard in each "classroom." After the lecture, Mary presses a button on her telephone stand (which allows her to be heard by everyone on the system) and asks a question. The instructor replies and is then challenged by a student in another town. At 7:30, the equipment is packed away in the coat closet, and Mary feels more confident about tackling the local grain dealer's tax return the next day. For an attorney in a small town, the telephone course provides cheap and convenient access to high-quality professional education. "How else," asks Mary, "could I participate in a class taught by the State Bar's most noted tax attorney?"

The basic technology of the telephone has been around a long time. But the telephone has been the unattractive sister of racier technologies of education's boom period. Why choose the telephone when more exotic equipment is available? The telephone has always been in the background, providing support but never taking an educational spotlight. Also, the driving force for greater access to education has not always existed; it is a more recent theme in educational circles.* In the past, when remotely located learners were considered, the telephone was passed by--or probably rarely even considered. That the telephone is now being taken more seriously as an educational resource is a sign of the times: using existing technologies better is preferable to building completely new technologies.

*Evaluations of when, where, and for whom teleconference teaching is most applicable have only begun to occur. Social evaluations of the use of teleconferencing for remote meetings are summarized in Robert Johansen, Jacques Vallee, and Kathleen Spangler, *The Camelia Report: A Study of Technical Alternatives and Social Choices in Teleconferencing*, Institute for the Future, Report R-37, 1977.

FIGURE 21. THE EDUCATIONAL TELEPHONE NETWORK AT
THE UNIVERSITY OF WISCONSIN-EXTENSION



TELEVISION: A CHANGE OF DIET

Though it is not obvious from today's diet of television programs, television is another fertile area for learning inventions. Decentralized learning, assisted by television, is now growing at surprising rates. The University of Mid-America, for instance, made detailed market surveys of the demand for college courses offered by television.* A large need was identified, and the University has implemented a program with thousands of students using their homes as classrooms.

*See *Proceedings of Conference on Open Learning in Higher Education*, University of Mid-America, Lincoln, Nebraska, 1974, 1975, and 1976.

Will students resist learning by TV? In a 1972 survey, only 1% of potential adult learners preferred learning by TV or video cassettes; less than 1% of current adult learners employ TV, radio, or cassettes (Carp, Peterson, and Roelfs, op. cit.).

New television-based technologies are also changing the character of the medium to provide more viewer control. Video discs, for example, may offer mass distribution of high-quality entertainment and learning at the discretion of the viewer--not of television stations. These discs, much like phonograph records, offer packaged programs which can be played and viewed on home TV sets at the convenience of the owner. While they are still unproven as a *mass* medium, their promise is real if they can evolve beyond the novelty stage. Similarly, home games for play through a TV set are another novelty with learning potential. While the games are presently not designed for learning, one subtle lesson they are teaching is that viewers *can* control their televisions. Once this lesson is learned, television could become a tool rather than a toy.

Some resistance to television stems from a fear that it will depersonalize education. But the TV set need not be a substitute for a human teacher. While television productions can create learning experiences unequalled by any classroom teacher, the medium will not replace more human functions. The teacher who makes astute use of television will be the most effective. Here, as in other areas, human/machine combinations hold the most hope for the near future.

One vision suggested by the technology of television is that of people connected together through telephone and television networks. Such a vision is being tested now in such places as Reading, Pennsylvania (Figure 22); Spartansburg, South Carolina; and Irvine, California. And although the politics of cable television have frequently stalled the evolution of interactive home services, it appears that some of them will make it within the next 10 years. The educational potential of such ventures is impressive; they could easily support computer-assisted learning, special programs, and even student discussions. Isolated villages could have

the resources of metropolitan centers to create a "new rural society."* The television would play an important part in

FIGURE 22. ADVERTISEMENT FOR THE READING, PENNSYLVANIA, INTERACTIVE CABLE TELEVISION SYSTEM, ORGANIZED BY NEW YORK UNIVERSITY'S ALTERNATE MEDIA CENTER

Use Berks Community Television for information, entertainment, ideas & friends.

What is Berks Community Television?

Berks Community Television is a new, not for profit, interactive cable TV channel in the Berks County area. Interactive means that people at different locations throughout the city and county can see and talk to each other as if they were in the same room. We call it two way television. This means you can be part of our programs from your home telephone.

A service for senior citizens.

For the first time in Berks County, a cable TV channel is available to serve a special group of citizens - our seniors. All of the facilities of Berks Community Television are directed towards serving their particular interests. For example, there are programs that explain Social Security regulations and programs that describe Medicare and Medical Assistance. Berks Community Television also provides entertaining programs that have one purpose - enjoyment. These include the weekly quiz show Sense and Nonsense as well as Sing Along where everyone is sure to join in the fun of singing their favorite tunes. Then there are programs that cover many of the concerns that older people have about local government, police protection, bus transportation and nutrition.

How does BCTV work?

The participants themselves, almost exclusively senior citizens, assist in the planning and production of programs for this television system. Audiences (we prefer to call them participants) gather at each of the three centers at program times. "Meet the Mayor" is one example of a regular Berks Community Television program which is cablecast directly from City Hall. The Mayor joins the participants at the three centers via a special hook-up. Meeting the Mayor this way provides an opportunity for open discussion of issues that are important to the community with excellent results.

You can participate at home or in our studios.*

Participants who gather at the Community Centers are not the only people who can enjoy Berks Community Television. Through special arrangements, as of September 27, 1976, programs are now cablecast over Berks Cable channel 3, Monday through Friday from 10:00 a.m. until noon. All viewers are invited to join us by coming to Hensler Community Center, Kennedy Towers or Horizon Center or by participating from home by telephone. The ability to participate from home by telephone is one of the things that makes Berks Community Television so unique. It not only provides programs of community-wide interest, but it also provides viewers with an opportunity to make these programs more meaningful with their personal comments, thoughts and concerns. The number to call while programs are in progress is 378-0486.

Become involved!

Berks Community Television wants your help and suggestions. On-the-job training is available in planning, production, talent and other areas of programming. We believe you will find it exciting and satisfying to be associated with this locally based community television system. A few hours of your time each week would contribute so much to our future plans, and perhaps yours too. For more information stop by at any of the Neighborhood Community Centers listed below any morning Monday through Friday between 9:30 a.m. and 12:30 p.m., and ask to see the Berks Community Television coordinator.

Watch Cable Channel 3, 10 AM to 12 noon every day.

BCTV Berks Community Television

A NON-PROFIT ORGANIZATION
call 374-3066

• Horizon Center of Berks County
(Erdman Hall)
9th and Court Streets

• Hensler Community Building
Intersection Avenues A and B
Glenside off Schuylkill Avenue

• Kennedy Towers
(Community Room)
300 South 4th Street

*The "new rural society" is Peter Goldmark's term, from a project of the same name, which he is attempting to implement in Connecticut (Goldmark Communications, Stamford, CT 06904).

this vision, functioning both as a display screen for broadcast programs and as a computer terminal, allowing viewers to talk back and control what they are seeing.

COMPUTERS: EXTENDING THE BOUNDARIES OF EDUCATION

Needed: students and teachers who understand inherent strengths and weaknesses of technologies (technological literacy).

Today, computers are most well-known for their number-crunching skills, their ability to store large amounts of information, and their inclination to make stupid errors repeatedly. However, computers are also a communications frontier with far-reaching educational potential. For instance, Control Data Corporation (based in Minneapolis) has recently begun a daring venture into computer-assisted learning through its marketing of the PLATO system.

Needed: training programs for potential authors of programs for new media--good book authors are not necessarily good authors for computer-assisted instruction (CAI).

Developed at the University of Illinois by Donald Bitzer, PLATO is probably the most powerful computer-assisted instruction system now in existence. It operates on a large central terminal, typically connected to remotely located users by leased telephone lines. A special terminal displays animated figures and photographs and transmits audio messages. Such computer-assisted instruction systems have previously been available only through large educational institutions. But now, Control Data is planning to establish neighborhood centers where PLATO services--including courses, communication, and information storage--will be available to the public for a fee. Such direct marketing of educational and communication programs may open new avenues to learning which are independent of conventional educational institutions.

Computer networks like the PLATO system are becoming increasingly common, often extending internationally. They form a unique communications environment in which cost may be unrelated to geographic distance. "Long distance" messages cost the same as local messages, since the computers

are joined permanently. A computer in London is used for the same cost as one in San Francisco. Thus, distant learners can have access to the highest quality resources at very low rates. Such educational and communications benefits of computer networks are just beginning to emerge, but could blossom within the next 5 to 10 years.

While computer networks have exciting potential, the new minicomputers are even more startling. The cost reductions which have made calculators easily available to the public are now beginning to occur with computers. Future computers will be smaller in size, larger in power, and lower in cost. Already, perhaps 100,000 microcomputers are in use by hobbyists in American homes (no exact count is available), with an expected sales volume of 10,000 to 15,000 per year for the next three years.* With costs dropping rapidly--for increased computing power--one can imagine a mass market for computers by the early 1980s. Thus, in the future, computerized teaching programs could be purchased as easily as phonograph records are today.

Needed: prepackaged educational programs for small computers.

SATELLITES: AN INTERACTIVE POTENTIAL

Hand-in-hand with telephones, television, and computers will be satellites. To date, a broadcast mentality has dominated satellite tests: the focus is exclusively on sending a message out to the masses. But satellites need not be used only this way. They can also be used interactively, with learners as full participants. The Communications Technology Satellite (CTS), sponsored jointly by the United States and Canada, is presently being used for a series of teleconferencing tests. Such teleconferencing allows

*This sales volume is estimated by *Technology Forecasts and Technology Surveys*, vol. 8, no. 9, September 1976, pp. 2-3.

immediate communication among widely scattered persons-- sometimes with a full television picture.

When variants of the CTS and other experimental satellites become available commercially, even the most remote areas can be easily linked to the latest educational resources. For example, the ability to "exchange" faculty via satellite is presently being tested at Stanford University and Carleton University (Ottawa, Canada); students at Stanford's campus may enroll in a course taught by a Carleton professor.

This educational potential of satellites has particularly important implications for developing countries. Satellite signals can replace endless miles of land cable, providing a real technological leap for developing areas. No longer will it be necessary to follow a gradual schedule of educational development, building schools first in large cities while outlying areas remain educationally impoverished. Furthermore, the satellite promises easy access to new cultures: in a few years, a student at Stanford (or at less prominent universities) might just as easily study under a Nigerian university professor as a Carleton instructor.

A SOCIAL ISSUE

The promise of communications machines does not guarantee that they will not be misused. Most of the inventions described above are clever variations or extensions of existing technologies. They stress human ingenuity coupled with technological power. Accordingly, they will be subject to social forces, not all of which will be educationally motivated. Television has been dominated, to date, by commercialized trivia, and it could remain so. Increased access could simply mean greater distribution of the same low-quality fare. Also, satellite links to developing countries may not always be greeted with open arms.

*A possibility:
technology-based education could become a second-rate education, with emphasis on training rather than education.*

The next 10 years are likely to see stirring debates over how closely the world *should* be connected. Some areas will almost certainly desire to remain at least somewhat isolated, probably in an attempt to preserve their own culture from what they perceive as an electronic onslaught. Communications machines will provide many choices, but they will be largely *social* choices. The technology promises to be relatively stable compared to previous periods; the social issues surrounding the technology will be anything but stable.

Another possibility: the privileged might get face-to-face while the poorer students get mechanized training via the machine. On the other hand, one could imagine a different scenario in which the poor are suspicious of "gimmicks," and media are used effectively only by the rich.

TAPPING INNER RESOURCES

All students have experienced those dull, groggy hours when it seemed impossible to absorb new knowledge. Most have also experienced moments of heightened ability and intense concentration, characterized by ease and eagerness of learning. Suppose they could call up such states at will, whenever they needed or wanted to learn something. This is the appeal of the new frontiers of learning, explorations on the borders of consciousness itself.

Over the next 10 years, there is likely to be an increasing interest in exploring the inner processes of the human mind and their relation to everyday behavior. Such explorations have been aptly entitled "The Aquarian Frontier" by Theodore Roszak* in his analysis of the new spirituality. The Aquarian Frontier includes such contemporary movements as Transcendental Meditation (TM), yoga, astrology, humanistic psychology, body therapies, biofeedback, and psychic

*See Theodore Roszak, *The Unfinished Animal*, New York: Harper & Row, 1975. For a general survey of current social movements in this area, see Charles Y. Glock and Robert N. Bellah, eds., *The New Religious Consciousness*, Berkeley: University of California Press, 1976. Included in this book are the results of a survey of Bay Area residents and a series of case studies of particular groups.

research. It is a strange--sometimes bizarre--collection of ideas, but a collection which deserves a critical appraisal for the educational merits it may contain.

Question: Will the popularity of such self-improvement programs continue to grow; will they really "play in Peoria"?

These "exercises" aim for a basic sense of relaxation and well-being. Yoga does so through asanas (postures); tai chi chuan, through dance movements; aikido, through "blending" with one's opponent; and meditation, through breathing and focused concentration. Such methods attempt to synthesize mind and body to produce a sense of "alert" relaxation--a prime state for learning.

The key to these "soft" inventions is, quite simply, learning how to relax. In an increasingly complex world, it is becoming apparent that students need to learn how to relax. Similarly, they need to be relaxed to learn. Today's schools have paid virtually no attention to teaching this art. From their very first learning experiences, students are taught how to sit straight, to cramp their fingers to produce good penmanship, and to form their bodies into socially acceptable positions.

Needed: personal skills in selecting among self-improvement programs.

Now, some educational mavericks are suggesting a myriad of alternatives to the rigid educational approaches of the past. According to them, "cramming" for exams--hunched over a desk all night drinking black coffee--may soon be replaced by potentially more effective ways of learning. Yet, because of the increasing popularity of inward-focused methods, this field is attracting charlatans who hawk their latest gimmicks to naive clients. Charlatans are prevalent in many fields, however, and their presence is no reason to avoid serious consideration of mental disciplines which might enhance learning potential.

SUGGESTOLOGY: FASTER LEARNING, BETTER RETENTION

Consider, for instance, the following brief scenario:

Filtered sunlight streams through an open window of the community college classroom. Inside, a dozen students begin a four-hour language lesson. Each student is given a foreign name and role to play, and the previous day's material is reviewed as students verbally act out these roles in the foreign language. Similarly, new material is introduced in the form of dialogues and real-life situations, supplemented by special language manuals. Students then watch the language program in the book or, in some cases, on television screens while the teacher reads it simultaneously. Material is visually arranged in triads, and each element is presented orally by the teacher with varying intonations. Following this "active" session is the most important part of the class: students relax in reclining chairs, eyes closed, and focus on their breathing. Flute music circles the room and blends with their calm breathing. The teacher then acts out the lesson dialogues with an emotional or artistic intonation to the rhythm of the music. At the end of the fourth hour, students leave relaxed and mentally invigorated.

This scenario describes an unorthodox method of teaching called *suggestology*. Developed by Dr. Georgi Lozonov in Bulgaria during the early 1960s, suggestology claims to dramatically increase learning speed and retention. In contrast to language laboratories and rigid structural exercises, suggestology uses the classroom as a stage on which

real-life situations are acted out in the foreign language. And through effortless relaxation--similar to the state achieved in yoga--muscle tension is relaxed, and the brain is relieved of the usual anxieties and stresses which interfere with learning. Students leave with a calm, intuitive perception of the material presented.

Lozonov's experiments show dramatic increases in the speed of learning, retention rates, and even enjoyment of the learning process itself. His work is, of course, controversial and still not fully validated. While systematic testing of his hypotheses is certainly possible, educational researchers have not risen to the task. However, suggestology is currently being used for courses in Bulgaria, as well as in Canada and in the United States.* And whether or not Lozonov's techniques per se prove to be correct, there is much within his general approach which seems promising. He is exploring the fundamentals of learning, and such explorations are likely to increase in importance over the next decade.

Suppose Lozonov is right; what would this mean for current teaching methods? Could his methods be used in conventional educational institutions?

Needed: systematic evaluations of suggestology and other new techniques.

BIOFEEDBACK: RELAXING WITH A MACHINE

Chemicals or machines might also be used to produce relaxed states and thereby increase learning abilities. One example is the EEG machine used in biofeedback training. The principle of such machines is simple: they provide

*A general description of Lozonov's work is contained in Sheila Ostrander and Lynn Schroeder, introduction by Ivan T. Sanderson, *Psychic Discoveries behind the Iron Curtain*, Englewood Cliffs, NJ: Prentice-Hall, Inc., 1970. A newsletter on current Canadian activities is available from Suggestopaedia-Canada, Room 420, Aselford-Martin Building, 1725 Woodward Drive, Ottawa, Canada K1A 0M7. The United States activities are monitored by The Society for Suggestive Accelerative Learning and Teaching, P.O. Box 1815, Des Moines, IA 50306.

detailed information about body/mind processes which most people do not even sense, let alone control. In an educational environment, one can imagine a scenario like the following:

Thea Washington sits in a large reclining chair in her study. She has checked out a small biofeedback machine from the community college learning center. Gently placing the two soft pressure pads on her forehead, she is ready to begin. She closes her eyes, trying to relax. A low-pitched tone appears and signals a state of relaxation, or alpha state. The tone disappears as soon as she begins to feel anxious or tense and reappears as she relaxes again. Meanwhile, the machine is also recording her brain patterns so she can go back and learn from them later. Soon, with her increased ability to distinguish internal states, Thea is able to predict when the on-tone will appear. And with practice, she becomes adept in inducing this desired state of relaxation without the feedback apparatus.

Biofeedback is still in its early stages of development and is far from fully tested. The potential here is for a technology directed toward the internal environment rather than merely the external world. Biofeedback is a promising example of humans using their own technology to discover their inner selves.*

Problem: How can educational programs combine mind and body needs?

*See, for example, Francine Butler, *Biofeedback and Self-Regulation; A Bibliography*, Biofeedback Research Society, Denver, Colorado, 1973; Barbara B. Brown, *New Mind, New Body; Biofeedback--New Directions for the Mind*, New York: Harper & Row, 1974; and Marvin Karlins, *Biofeedback: Turning on the Power of Your Mind*, Philadelphia, PA: J. B. Lippincott Company, 1972.

Needed: credible
educational programs
oriented toward
affective needs.

The potential for educational application of these "soft" learning inventions is far from assured. At present, there is very little interest in such ideas among educational research communities. But ignoring them may be costly to education; furthermore, it invites disreputable schemes which will not allow full exploration of the strengths and weaknesses of the new techniques. Rather, a strong "crap-detecting"* orientation should be encouraged to extract those elements which are most useful to teaching and learning processes. Roszak summarizes the current predicament in terms of the uncertainty likely to be faced over the next decade:

We have trapped God somewhere between the brain physiologist's computer and the carnival funhouse where everything novel and naughty draws a crowd. These are not extremes which yield some convenient riddling course; they are false starts, forgivable perhaps as pioneering efforts but false starts nonetheless. And if we are ever to settle the Aquarian frontier, we must mark the roads that lead to barren land. The lines are not easy to draw, for they cut across sincere intentions; but the time is at hand to draw them.** [our italics]

CONCLUSION

Learning inventions are promising educational resources for the next 15 years, though most of them "ain't that new." For people with specific educational goals, the central question is how seriously to take them. At their extreme, some learning inventions could fundamentally alter the nature of the teaching-learning process. On the other hand, starry-eyed "imagineers" abound, and it is hard to know just who or what to believe. Furthermore, one person's invention might be another's folly.

*As used by Neil Postman and Charles Weingarten in *Teaching as a Subversive Activity*, New York: Delacorte, 1969.

**Roszak, op. cit., p. 47.

The technologies which seem most promising have been around quite awhile: telephones, television, computers, and satellites. Their educational potential, however, remains largely untapped. The advice here is simple: look for clever applications of existing technologies to be most important. (Also, social evaluation of these technologies should be built into the new programs.)

Learning inventions of a softer variety are likely to proliferate over the next decade. Our rootless population will continue to search for meaning, often through slickly packaged products. Many of the new techniques will be shams; others will hold real promise. Perhaps the most significant societal development is not the new self-improvement techniques themselves, but the human needs to which they are attempting to respond.

In the end, each group will need to develop its own criteria for "learning inventions to watch." This list of inventions should be updated periodically. Learning inventions could have practical relevance to organizations that are looking for areas where they can have an unusually strong leveraging effect. In addition, they can serve as assumption-questioners--as future-crafted mirrors in which to periodically reexamine one's own goals.

PART II
THE PRAGMATICS OF LONG-RANGE PLANNING

PART II:
THE PRAGMATICS OF LONG-RANGE PLANNING*

The future has too often been viewed as a predetermined force--"out there"--to which we humble residents of the present must respond. Such a reactive approach, however, ignores the potential that each of us has to shape the future. The results of futures research, such as the societal trends described in Part I of this handbook are thus only the starting place for developing strategies to influence the future. They provide a context in which organizations can examine their own goals. Are the societal developments identified compatible with these goals? What societal barriers exist? What leverage points are suggested? In this sense, long-range planning is neither an arcane science nor a typical academic exercise. It is an attempt to deal systematically with questions which are basic to all organizations: What do we want to achieve? How do we propose to achieve it? How will we evaluate our progress?

This section of the handbook describes a simple, yet comprehensive outline of a long-range planning procedure, first developed under a grant from the Education Division of Lilly Endowment, Inc. The Education Division was exploring methods for developing five-year strategic plans for a number of major program areas to avoid scattering its funds in a series of unrelated projects. It sought to sharpen its program focus in order to increase its leveraging potential to improve educational opportunities. In particular, it expressed interest in reviewing operational strategies to maintain their effectiveness.

The long-range planning process suggested here was thus developed to support strategic planning in this environment.** However, this process

*Portions of this section are also published in Robert Johansen and Patricia Samuel, "Futurology Applied to Education," *Educational Technology*, forthcoming.

**It should be noted that this strategic planning process was only exploratory and was not part of the formal planning processes of the Endowment.

has broad applicability to any organization which is working to develop a longer range perspective--for five or more years.

A SIMPLE FRAMEWORK

Our approach uses four related exercises to answer the basic question: what do you want to achieve? These exercises include the use of scenario writing and the generation of goal statements and indicators of success. The choice of goals is further refined by consideration of institutional resources and underlying assumptions. Following the clarification of goals, attention is directed to the development of strategies. Next, evaluation procedures are addressed. Finally, each goal is considered in the context of future societal trends.

These exercises provide a simple framework for developing and refining program strategies by serving as a comprehensive outline of the basic elements in any fully developed program (Figure 23). They encourage explicit treatment of all the elements of programming and facilitate comparison among different program areas. Different organizations should, of course, develop varied emphases within this framework. The outline should not be interpreted as a rigid mold into which their concerns must be poured.

The order in which the elements of the planning framework are presented here is not necessarily the order in which they might best be considered. Our experience leads us to believe that all of them must be developed interdependently, but not according to any special sequence. Work on any one element often sheds new light on a previous one, provoking a reshaping of that element as well as influencing the substance of succeeding efforts. Thus, if one begins by generating goal statements, these should be regarded as tentative and subject to further scrutiny and revision after indicators of success or strategies have been developed.

EXERCISE 1: GOAL CLARIFICATION

Goal clarification is a necessary component for any comprehensive approach to educational planning. This function involves values clarification, the development of systematic visions of what is to be accomplished,

FIGURE 23. A SIMPLE FRAMEWORK FOR LONG-RANGE PLANNING

EXERCISE 1. GOAL CLARIFICATION

Goal Statements
Indicators of Success
Scenarios
Underlying Assumptions
Institutional Resources

EXERCISE 2. DEVELOPMENT OF STRATEGIES AND TACTICS

EXERCISE 3. EVALUATION

From Part I
of this
report



EXERCISE 4. INTERPRETATION OF FUTURE SOCIETAL DEVELOPMENTS
WHICH COULD AFFECT PROGRAM GOALS

the formulation of operational goals, and the establishment of priorities. In addition, goal clarification ideally assumes a periodic reexamination of the assumptions on which goals are based. Unfortunately, such processes are not always easy to promote in busy decision-making environments since daily activities tend to exclude a review of goals. Thus, in the past, educational goal setters have typically been either independent authors carving out their images of a more desirable future or educational officials struggling under the burden of a heavy schedule to refine goals which are often unstated and confused.

The writings of independent authors abound. Images of possible educational goals come from Ivan Illich, Max Rafferty, Paulo Freire, John Holt, Charles Silberman, and others who typically offer emphatic views of educational ideals. Usually critical of current practices, these alternatives have gained a broad audience beyond the world of academia. Though authors presenting educational goals are clearly not in agreement, they at least suggest strong images of the future. However, such images are not well tied to the processes of educational planning. Thus, while images abound, they often exist in isolation from any "real world" of education.

At the same time, many educational institutions have no conscious image of the future, but rather operate from day to day on limited or unstated goals. To help make such institutional goals both explicit and operational, the Educational Testing Service is now marketing a technique known as the Institutional Goals Inventory (IGI).^{*} A process aimed at goal clarification within educational institutions, the IGI is a standardized system for identifying, refining, and prioritizing institutional goals as seen from the point of view of different interest groups. The method is independent of any specific decision-making context and is designed to provide comparison across educational institutions. This kind of comparative goal clarification has already been implemented in public and independent schools and universities in California.^{**} Obviously, the results

^{*}See Richard E. Peterson, "Towards Institutional Goal-Consciousness," *Proceedings of 1971 Western Regional Conference on Testing Problems*, Berkeley, CA: Educational Testing Service, 1971. More recent information is available through Educational Testing Service, Princeton, NJ 08540.

^{**}*Goals for California Higher Education: Summary of a Report*, Princeton, NJ: Educational Testing Service, 1973.

of the IGI and similar procedures must still be incorporated into the operations of particular institutions; nevertheless, the technique does provide a useful addition to the often haphazard approaches to goal clarification in education.

A different approach to goal-setting is illustrated by the planning process used in the Fresno, California, public school district.* In contrast to the IGI approach of choosing among exogenous goals, the Fresno model focuses on identifying local needs and problems as the basis for goal formulation. All members of the community are invited to a day-long conference to determine local needs. Participants are divided into small groups and asked to list the problems which "are keeping our school from doing the job it should do for the student." The lists are then circulated, allowing each group to assess the importance (according to a 4-point scale) of every problem identified by fellow participants. In the afternoon session, the same process is used to address the question of knowledge, skills, and attitudes students should possess upon graduation. The lists are then turned over to an appointed planning committee which is responsible for developing operational goal statements for each of the high-priority needs identified by the community.

Participatory planning can be more focused, as in the Dallas system.** A committee of teachers, parents, students, and administrators works with the School Board on an annual basis to assess needs, formulate goals, and allocate resources. A needs assessment survey is distributed annually; this survey lists various school functions, programs, and activities. The respondents are asked to rate each item twice--first assessing whether or not the item is presently receiving sufficient emphasis and, second, determining what degree of emphasis it should receive in the future. The results are tallied and gaps identified. Based on these need priorities, the representative committee works with professional staff to formulate goals for the following year, to design programs to achieve the goals, and to prepare budget requirements for presentation to the school

*Needs Assessment in Education: A Planning Handbook for School Districts, Trenton, NJ: State Department of Education, 1974.

**Ibid.

board, at which time the goals are rank-ordered. The goals are then adopted, in the order of their importance, until available funds are exhausted.

These types of goal-setting activities suggest several approaches for organizations that want to help shape the future of education. In particular, goal clarification might include the following:

Goal Statements. Goal clarification typically begins with a preliminary statement of program goals. The object is to sharpen, refine, and limit the statement to arrive at a clear, concise, and practical definition. Some of the guiding questions for this process are:

- What kind of changes are you seeking to bring about? substantive changes (e.g., changing content of curricula)? process changes (new ways of organizing things)? attitudinal changes (value shifts, etc.)?
- What alternative programmatic goals might accomplish the same result?
- Whom do you want to influence? If *individuals*, which ones? a particular age group? educational level? a particular racial or cultural group? employees or parents? the most needy (what are the criteria of need)? If *organizations*, which ones? public or private? formal educational institutions or community-based organizations? a few specific ones or a general class? society as a whole?

This effort should reveal how the present activities of the organization are related to the long-range goals. Activities could, for instance, be grouped around the goals to which they relate. Those activities which don't fit might then serve as aids to redefining the goal statements.

Goal statements are often difficult to develop to the satisfaction of all parties involved. They must be worked and reworked. The basic dilemma here is: How specifically can goals be stated without inhibiting the organization? On the other hand, how general can they be without becoming obscure? If one's ultimate goal is to achieve equal access to postsecondary education for women, a variety of more specific goals could be considered. The level-of-specificity question cannot be answered mechanically; it depends on the nature of the organization and the subject matter involved.

Indicators of Success. Another exercise which may help clarify program goals is to develop a list of indicators of success. The purpose here is to explore how progress toward the goal can be measured or evaluated. To develop indicators of success, a group might begin by thinking of ways to measure the impact of the program on the target group--individual participants or relevant institutions. In this exercise, the desired results are stated in measurable form. For example, discussion might be organized around the following questions:

- Is the primary objective a quantitative increase (e.g., number of college graduates)?
- What qualitative changes are of interest (e.g., better educated students, improved parenting)? Are there any measurable changes which might indicate these qualitative changes?
- What non-numerical indicators of success might be used (e.g., attitudinal surveys, evaluations by participants)?

The identification of indicators of success encourages a rethinking of one's goals from a future-oriented perspective. Too often, indicators of success are never considered and an organization's progress--or lack of progress--becomes much more difficult to track.

Scenarios as Goal Clarification Tools. In scenario construction, one paints a picture of what the future would look like if the goals were achieved. The scenario is thus a desirable picture--not a utopia, but a vision of a good future toward which the program aims. The focus is generally on depicting, as vividly as possible, the aspects of life which would be affected by the proposed program. The purpose of this exercise is to move from initial, usually vague ideas such as "more relevant education" or "greater educational opportunity" to a goal with concrete meaning. This focusing process can be aided by systematic consideration of the relevant theaters of action. For example, in discussing educational goals, one would consider the impact on classroom activities, the curriculum, teachers' attitudes, students' performance, school financing, etc. The broader implications of the goal can be explored by considering how success might affect other social systems such as the family, the government, and societal values.

In developing such a scenario, every attempt should be made to indicate key events or developments that would contribute to the achievement of the goal: for example, the success of a goal may be dependent upon passage of supporting legislation. And while the focus is on a positive future, the scenario can also identify negative developments, inimical to the achievement of one's goals, which must be avoided.

After a preliminary vision of the desirable society has been developed, it is useful to reexamine the goal statements in light of the scenario. Does the goal focus on the central elements of the scenario? Is achievement of the goal dependent upon a number of external factors over which the program has no control? Does the goal seem realistic in light of the possible undesirable developments which would preclude its achievement?

Underlying Assumptions. Another dimension of goal clarification is the exploration of basic assumptions and values which underlie the program area. If the assumptions and values are made explicit, their validity can be examined, and possible inconsistencies between program goals and strategies can be avoided. Assumptions may be elicited by asking such questions as:

- What theory of social change underlies this program area?
- What assumptions about human nature are being made?
- What are the assumptions about how institutions operate?
- What values are implicit in the goal orientation?

At this stage, the group might also examine the historical rationale for the choice of goals. What lessons from past experience informed the choice of goals? And how does the proposed program differ from, complement, or reinforce the activities of other organizations? This exploration should provide a context for viewing the program area in relationship to other programs and concerns.

Institutional Resources. Goals should be reasonably related to available resources. Of major concern are two basic organizational resources: money and people. In regard to financial resources, some

questions which may prove helpful in assessing the relationship between available funds and program goals are:

- What is the relationship between goal achievement and financial investment? Is it incremental (the more dollars invested, the more scholars trained)? Is there a minimal plateau (at least \$1 million must be invested to even initiate this program)? maximal plateau (no more than \$7 million can be wisely spent at this time)?
- Would it be easier to raise outside funds for certain goals than for others?
- What is the projected program budget and how does it relate to the average funding level and duration of projects?
- How, if at all, might the goals be changed if the projected budget were doubled? halved?
- What are the reasons for believing that the projected program budget will result in significant impact on the field?

The examination of the relationship of goals to the level of financial investment might include a chart, as illustrated in Figure 24, which shows the estimated funding levels over a five-year period. Here, the percent allocation among different goals and the projected total funding level for each year are indicated.

An underlying tension here is a variation of the perennial chicken and egg debate. Should one set goals and then calculate the budget needed, or should one start with the probable funding allocation and then choose goals that can be accomplished within these financial limits?

Many of the same questions about financial resources are also applicable to the relationship between staff resources (both paid staff and volunteers) and program goals. Additional questions which might be useful include:

- How many and what kinds of staff would each goal require?
- How might a change in the ratio of paid staff to volunteers offset the feasibility of the goals?

FIGURE 24. ESTIMATED WEIGHTING OF INVESTMENT WITHIN GOAL AREAS

	1975 Actual	1976 Actual	1977 Estimated	1978 Estimated	1979 Estimated
Goal 1	55%	60%	65%	70%	75%
Goal 2	30%	30%	30%	25%	20%
Goal 3	15%	10%	5%	5%	5%

Total
Estimated
Budget

X Dollars X Dollars Y Dollars Z Dollars Z Dollars

All of these procedures--goal statements indicators of success, scenarios, underlying assumptions, and resource constraints--seek to develop an optimal degree of clarity about organizational goals. The clearly defined goals can then be used to evaluate strategies and tactics.

EXERCISE 2: DEVELOPMENT OF STRATEGIES AND TACTICS

Strategies and tactics differ in their level of specificity. Both are means of achieving the stated goals; strategies provide an overall approach, while tactics describe the details of exactly *how* the approach is to be implemented. For instance, Martin Luther King's strategies were consistently built around the principles of nonviolent direct action in the

context of his own theological beliefs. Dr. King's tactics included sit-ins, marches, voter registration drives, and other such activities. The strategy of nonviolence set the boundaries in which specific tactics were developed.

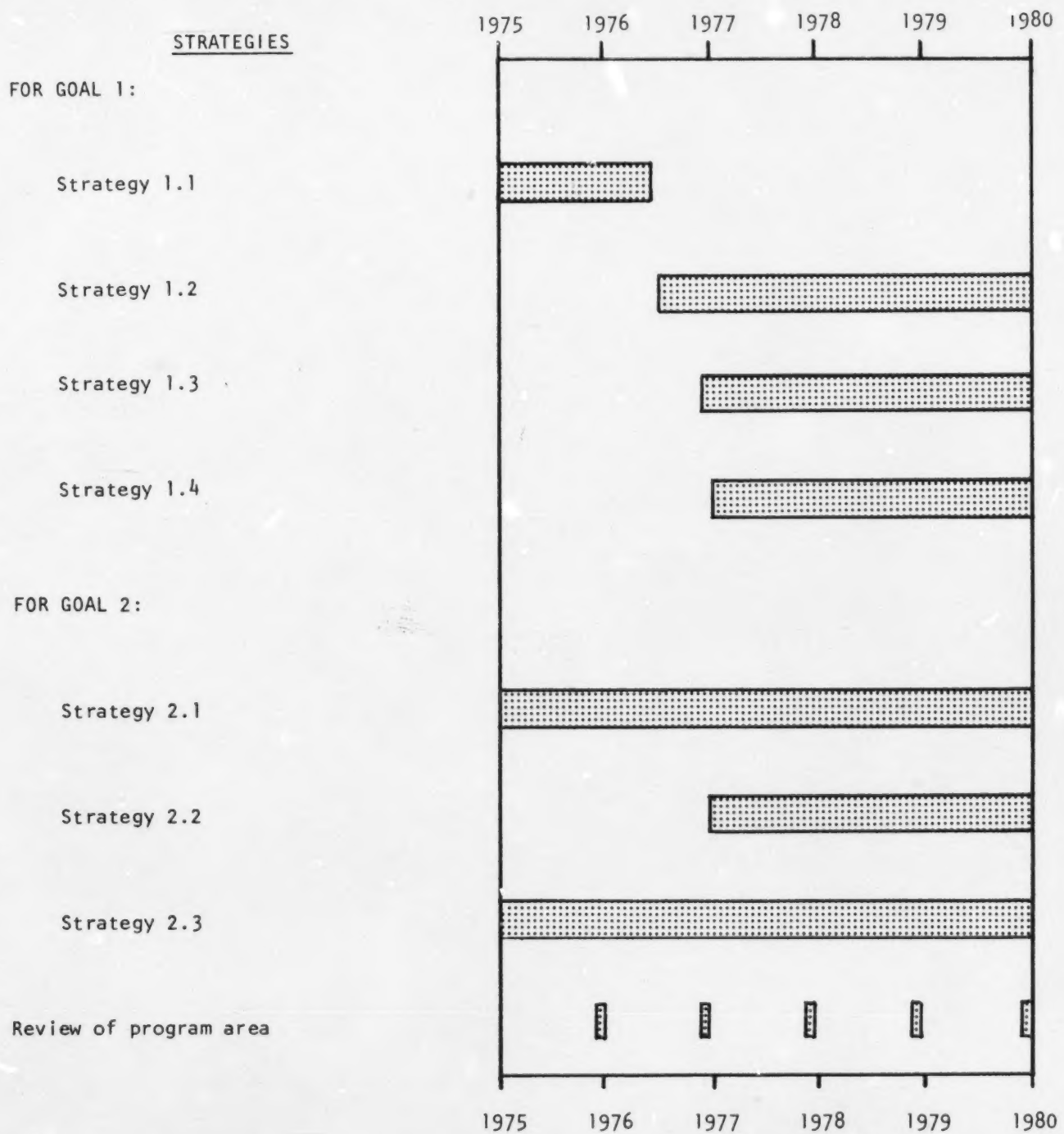
The distinction between strategies and tactics is often not precise and should not be overemphasized. Arguments over whether a given activity constitutes a strategy or a tactic may serve no useful purpose. However, it is usually important to develop both an overall plan of action and specific means for implementing the plan.

As an organization develops strategies for achieving its goals, consideration of questions such as these can be useful:

- What are the *possible* ways to achieve the organizational goals?
- Which strategies have been attempted before in this field? with what result?
- What population groups will be most affected by the proposed strategies? Which groups are most needed to successfully implement the strategies?
- What current organizations are working against the implementation of the proposed strategies?
- What societal developments are crucial to the success or failure of the strategies?
- If the program budget were doubled, how might the strategy be different? if it were halved?
- Which strategies are likely to follow the initial strategy, perhaps one or more years from now? Is there a clear sequential order to the strategies being considered?
- What indirect effects (both positive and negative) might result from implementing the proposed strategies?

To the extent possible, strategies should be examined in a future context. Figure 2. shows a sample chart for consideration of several strategies over a five-year period. Notice, in this case, that the time line includes the past two years as well as the next three. The choice of time frame depends on the characteristics of the organization and the subject area involved. The general guideline is: cover as long a time period (past and future) as is realistic.

FIGURE 25. SAMPLE TIME LINE FOR AN OPERATIONAL STRATEGY



Consideration of strategies should precede the choice of specific tactics. It is all too easy to become wedded to a particular tactic at the expense of considering other, perhaps more productive tactics. Once a set of strategies has been agreed upon, then it is time to begin thinking of tactics. As this process gets underway, the following questions should be helpful:

- What current tactics are being attempted in this or similar fields? How successful have they been?
- Are the tactics under consideration consistent with the goals, assumptions, and strategies of the organization?
- Are there potential problem areas, such as local laws or cultural taboos, which should be considered in developing tactics?
- Does information about likely societal developments suggest any tactics which might be particularly effective or ineffective?

The development of strategies and tactics needs to be closely linked to other long-range planning activities such as goal-setting. In many educational institutions, consideration of basic questions about goals is rarely pursued. Instead, planning efforts often concentrate on minute details. Most organizations now have at least one person nominally in charge of "planning." Yet, this designation is often used to describe very narrow activities. As Lahav has noted: "Educational planners have been content to forecast the number of third grade students in Oshkosh in the year 2000. What these students will be learning in Oshkosh has been largely irrelevant to the purposes of planning. In fact, planners have not even asked themselves if there will be an Oshkosh in the year 2000, or even if there should be an Oshkosh."*

The increasing availability and use of programmed planning techniques, such as PERT (Program Evaluation and Review Technique) and PPBS (Planning-Programming-Budgeting System), has subtly encouraged an overemphasis on tactics. The tendency has been to use such techniques without a parallel

*See Ron Lahav, "Futurology and Education: Four Futurologists and their Theories of Education," *Journal of Educational Thought*, vol. 7, no. 1, April 1973, p. 63. The article examines the educational goals implicit in the futures imagined by Buckminster Fuller, Jacques Ellul, Herman Kahn, and Alvin Toffler.

examination of the assumptions present in the readily available data. Thus, the relative sophistication of the techniques of tactical planning has actually been at least partially harmful to comprehensive consideration of educational futures, since it is tempting to use only data called for by a particular technique. And even though the techniques are often well-developed and frequently make use of quantified models, the tactical planning processes are far from standardized. Furthermore, there is a rather annoying trend of naming every new technique--usually with an acronym--even though the techniques overlap considerably. This practice makes the situation particularly confusing to novices.

The development of strategies and tactics is obviously crucial to the long-range planning process. Tactics, however, can easily be overemphasized--often at the expense of other procedures involved in long-range planning.

EXERCISE 3: EVALUATION

Planning and evaluation have frequently been defined as completely separate activities, usually with little relation to each other. The process of planning, however, is actually before-the-fact evaluation--that is, evaluation of alternatives before they occur. Conversely, evaluation involves after-the-fact planning which should gather information to be used in planning for the future. Evaluation and planning, then, are comparable processes which differ primarily in their relation in time to actual events or projects: planning occurs before, while evaluation occurs during and after. From this point of view, evaluation is a key function in a comprehensive approach to educational futures. Unfortunately, evaluation research is becoming a quagmire in itself, usually quite apart from efforts to plan for or explore educational futures.

The literature of evaluation research has been discussed elsewhere.* The major point here is that evaluation efforts should be inherently linked

*A general reference book for the techniques and terminology of educational evaluation has now been published as: Scarvia B. Anderson, Samuel Ball, and Richard T. Murphy and Associates, *Encyclopedia of Educational Evaluation*, San Francisco: Jossey-Bass, Inc., 1975. Also, the American Educational Research Association initiated a series of training booklets on evaluation research, now published as *Evaluation in Education*, edited by W. James Popham, Berkeley, CA: McCutchan, 1974. Other sources abound.

to those of planning. Michael Scriven has developed a simple checklist for evaluation which he argues should be used before, during, and after a program is undertaken. In encouraging the broader use of his particular approach to evaluation, Scriven notes that "few educational products have ever been produced that met all these standards prior to production, although that is exactly when they should be met in order to justify production."* On a similar note, Rossi and Williams have noted that the major problems in evaluating social programs can be traced to "vague goals, strong promises, and weak effects."** Clearly, an evaluation which does not begin until after a program has occurred is an evaluation under severe handicap. Planning and evaluation must be compatible activities, each enriching and critiquing the other.

The practical aspects of evaluation will depend on the organizational context. The procedures, however, should be designed to systematically collect information about progress toward the indicators of success discussed earlier. Also, the method of evaluation will have to be flexible enough to encompass the complexity of the subject area.

As specific evaluation procedures are being developed, questions such as these might be considered:

- How long will it take before results can be expected? Are there key points along the way? When should reviews occur?
- Is it reasonable to use quantitative evaluation techniques? What important facets of the program cannot be easily quantified?
- Who could best perform the evaluation role (e.g., outside evaluators, staff)? Should the program be evaluated from more than one perspective?
- How should evaluation results be used to revise program goals? Should this happen continuously (i.e., formative evaluation) or only at some end point (i.e., summative evaluation)?
- Are there any constraints (e.g., financial, social) on evaluation procedures which might be used?

*Michael Scriven, "Evaluation Perspectives and Procedures," in W. James Popham, ed., *Evaluation in Education*, Berkeley, CA: McCutchan Publishing Corporation, 1974, p. 7.

**Peter H. Rossi and Walter Williams, *Evaluating Social Programs*, New York: Seminar Press, 1972, pp. 16-23.

- Are there any standardized evaluation procedures which might also apply to the given program?
- Are there ways in which the program could be modified (without changing the goals) in order to obtain a more comprehensive evaluation?
- Are there any comparison (i.e., control) groups which might be used to compare with those experiencing the program?

EXERCISE 4: INTERPRETATION OF FUTURE SOCIETAL TRENDS

The purpose of the planning procedures described here is to clarify program goals and to devise means to achieve them. Such a process should identify potential problems and promote consideration of alternative solutions. This task is integrally linked to a consideration of future societal developments. Some map of future events and trends--even if sketchy--can be very helpful in constructing program goals and in periodically reexamining them. It can assist organizations in identifying leveraging points and likely candidates for major program focus. Perusing such a map might provide advance warning of cul de sacs or unscalable mountains--programmatic directions with little chance of success.

The identification of societal developments likely to impact program plans can proceed in two directions. In our work with Lilly Endowment, for instance, a list of important societal developments was generated first by beginning at a very broad level and then by considering individual goals within each program area. At the broad level, a list of global issues for the near future was constructed by referring to the general literature of futures research and previous Institute for the Future studies. Each of these broad issues was evaluated according to the question: Would significant change in this area affect--either positively or negatively--the Endowment's ability to accomplish each of its stated goals? If the relationship seemed clear, the issue was listed together with the program area affected. Next, starting with each of the specific goals within the program areas, the question asked was: What external events or trends could affect--either positively or negatively--the Endowment's ability to accomplish this goal?

Ultimately, the identification of future societal developments should be fed back into the goal clarification process. Once an organization has formulated a tentative set of goals, it can ask: What societal developments would need to occur in order for the goals to be met? Is it reasonable to assume that these societal developments will occur? Are there societal developments which should be encouraged (or discouraged) in order to increase the chances of achieving the goals? Do the likely societal developments suggest any revisions of the current goal statements?

A simple cross-impact technique may be helpful in answering these questions. Figure 26 shows a cross-impact matrix for exploring the potential positive and negative effects of projected future conditions on an organization's ability to achieve its goals. Each organization will want to modify the sample list of societal developments in this figure in order to focus on those most relevant to its particular program thrusts.

In addition to this cross-impact technique, scenarios provide a useful tool for linking goals and future developments. For instance, once a scenario is written for a particular program, one might ask: What societal developments would have to occur in order for this scenario to be realistic? Or, are there any societal barriers which now stand in the way of the given scenario? Such an analysis might assist in identifying new areas of importance where an organization should be investing its efforts. It also encourages consideration of second- and third-order consequences of a set of goals.

The systematic tracking of societal developments is generally considered a luxury which most small organizations cannot afford. Yet, it is on the seas of these societal developments that small interest groups are violently tossed about. A basic understanding of the general currents of societal change can make a big difference in overall effectiveness.

CONCLUSION

The development of a planning framework within an operational context faces certain constraints. In an organization that has been operating for

FIGURE 26. CROSS-IMPACT CHART FOR CONSIDERING GOALS
IN THE CONTEXT OF SOCIETAL DEVELOPMENTS*

HOW WILL YOUR GOALS BE AFFECTED?
(+ = enhanced, - = inhibited, 0 = no effect)

		Goal 1	Goal 2	Goal 3
DEMOGRAPHICS	25- to 45-year-olds are major determinants of policy			
	Long-term population decline in Northeast			
	Birthrate remains below replacement level			
WORK	Retirement age lowered to 55			
	Most jobs include both menial and intellectual tasks			
	Degrees are ruled invalid basis for hiring/promoting			
POLITICAL ECONOMY	Guaranteed annual income is passed			
	National planning is implemented			
	Stringent energy conservation			
LEARNING INVENTIONS	Neighborhood Computer Assisted Instruction centers are available to 50% of the population			

IF THESE DEVELOPMENTS OCCUR BY 1985 . . .

*The developments listed here are only examples drawn from Part I. Each reader should select developments relevant to their own programs.

several years, certain goals are accepted implicitly. Decision-making procedures, styles of work, and operational parameters have become well-established. Thus, in an ongoing organization, the emphasis of a long-range planning exercise tends to be on clarification of present goals rather than on development of new goals. Also, in the development of operational strategies, one cannot consider the efficacy of proposed procedures in a vacuum, but must ask, "What are the best procedures for the general style of work and decision-making patterns characteristic of the particular organization?"

On the other hand, if none of the implicit purposes or traditional procedures are subjected to critical scrutiny, the effort devoted to strategic planning may not result in any improvement of the organization. Thus, success of long-range planning efforts may depend on how skillfully one draws the line between those organizational parameters which must be accepted as givens and those which are subject to question and revision.

Ultimately, the value of any long-range planning process will depend on its contribution to day-to-day operations. If a planning process is adopted aggressively, it has the potential to support several important organizational functions:

- Comparison of programs within an organization
- Periodic reassessment of program areas
- Overview of the program areas by officials not involved in the daily activities of program staff
- Specific decisions about funding and screening of new projects
- Evaluation of current projects
- Evaluation of staff, identifying staff needs and informing hiring decisions
- Periodic dissemination of information about an organization's activities

The major lesson of long-range planning is that the process of thinking about the future should become an active and continuous organizational responsibility. Thus, a major task following initial completion of a plan

is to link the process of *developing* program strategies with the process of *using* them. Refinements, additions, and deletions should be encouraged. Strategic plans are intended to serve as decision-making aids for staff and officers. They should be closely related to project-level activities and updated as evaluation results are received. A planning document should both reflect and stimulate an organization's ideas about the future. The framework suggested here, then, should only be seen as the beginning of a continuous long-range planning process.

APPENDIX

WORKSHOP PROCEDURES FOR LONG-RANGE PLANNING

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Because long-range plans typically involve several members of an organization, workshops can provide an ideal setting for their development. In developing experimental strategy papers under a grant from the Lilly Endowment, the Institute relied extensively on workshop sessions. These workshops were designed to provide an environment for critical examination of program goals and operational strategies. Both the format and the substance of the workshops sought to crystallize the participants' thinking about how the program area should evolve over the next five years.

While the format of the workshops varied considerably, they can generally be described as intensive sessions of one or two days' duration, involving two persons from the Institute and two program staff from the Endowment (usually one from the program area under discussion and one from another program area). This mix was small enough to be workable, yet diverse enough to provide a range of perspectives in considering the problem.*

In order to provide a simultaneous record of the discussion, the major ideas were written on wax-backed cards which could be adhered to the wall and moved around as thoughts evolved. This recording technique also facilitated easy revision and reorganization of material as the discussions progressed.

At the beginning of each session, different portions of the walls were labeled: goals, assumptions, strategies, etc. Then, during the discussion of goals, if a basic assumption emerged, it could be noted on the wall for future reference. The cards could be quickly replaced as revisions were made in focus or wording. Also, if a statement originally developed under

*It should be noted that the productivity of the seminars was higher when the participants were effectively isolated from phone calls and other interruptions. Thus, it is important that a block of time be allocated to the seminars away from the normal pressures of office routine.

goals later appeared to be more appropriate as a strategy, the cards could be moved. At any given time, all participants had an overview of the various elements, their relative stage of development, and the relationship among them.

An eavesdropper would have remarked on the great variation in workshop procedures. At times, they resembled structured interviews. Other sessions were more like free-wheeling discussions. And in some instances, quite heated debates emerged. The Institute staff took a very pragmatic approach, adopting whatever technique seemed to produce the best results in the particular circumstances. The aim was to explore fully the implications of proposed courses of action, to make explicit the underlying assumptions so that their validity could be tested, to detect any inconsistencies in different elements of the strategic plan, and to examine alternative proposals. It should, of course, be noted that a high level of trust among the participants is essential to create an atmosphere conducive to this kind of critical questioning.

Following the intensive seminars, first drafts of strategy papers were prepared. Using the note cards as the skeleton outline, the various sections were developed in narrative form. An examination of the first draft often revealed gaps and raised further questions. These questions, together with notations about possible additional material and suggested revisions, were circulated to all participants along with the draft. If necessary, a follow-up seminar was scheduled or consultation was conducted by telephone or letter. This follow-up led to the preparation of a second draft intended to be a working document for the use of Endowment staff, officers, and the board of directors.

The strategy papers were developed in the form of notebooks; they were intended to be strategy papers in progress, with the format suggesting that the development process be continuous. Thus, they were intentionally placed within a loose-leaf notebook so that refinements, additions, and deletions would be encouraged. In short, the program notebook was a simple structure to encourage *continuous* long-range planning in the various program areas.

Other workshop techniques have been developed to support long-range planning on a large scale. One of the most comprehensive processes was developed by the National Adult Education Think Tank.* The Think Tank project developed a participatory planning process which involved the examination of alternative futures for adult education, as well as goal clarification and examination of alternative strategies for achieving those goals. The process included eight regional "think-tank" sessions, as well as one national session which lasted for two weeks. All of these sessions drew demographically representative groups of people and discouraged unnecessary dependence on "experts." Alternative futures which were raised in the groups were analyzed in terms of their relation to goals, values, assumptions, indicators of success, and strategies for action. The process in itself is not radically new, but its evolution in this context represents a unique attempt to link the analysis of alternative futures to goal clarification as well as to strategic and tactical planning.

In another effort, futures-inventions workshops have been developed by the Educational Policy Research Center at Syracuse as part of a project to promote civic literacy.** Designed to be used in a wide variety of settings, futures-inventions workshops provide a framework for constructing paths into the future. Through a series of question-and-answer exercises, participants formulate goals, develop indicators of goal achievement, project consequences of goal achievement, assess value shifts, write futures histories, and develop strategies and tactics. These workshop techniques thus provide a relatively short and intense exposure to planning from a futures perspective.

*National Adult Education Think Tank Project (supported by the U.S. Office of Education), University College, University of Maryland, College Park, MD 20740. The final report, by Gerald C. Hanberry, is called *Education and Learning for Adults in the '70s and '80s* (1975), with a separate report on the methodology, called *Inventing the Future: Participatory Planning Process for Alternative Futures*.

**Jill H. Ellsworth, Grace M. Healey, Warren L. Ziegler, *Futures-Invention: An Approach to Civic Literacy*, Educational Policy Research Center, Syracuse, New York, 1975.

CONCLUSION

No set of techniques is perfectly adapted to an organization's needs. Each of the workshop procedures described above, like many others, can aid in stretching our thinking into the future. Each provides some structural support for a planning process, but none provides mechanical guarantees of success. To work effectively, a planning process needs to be flavored with a pragmatic approach, a spirit of open inquiry, and perhaps a sense of humor.